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ADDRESSES.

ADDRESS IN DERMATOLOGY.[1]

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In obedience to the usual custom my remarks will be confined to what has appeared in the light of progress, advancement, and new discoveries in dermatology during the past year. It is difficult, if not impossible to determine in a year's time whether certain advances and discoveries in this department, as in other departments of medical science, are really such or are only so-called. It would not, however, be speaking in very flattering terms of the intelligence of the writers of the vast array of literature that is yearly presented to the medical profession, nor to those who eagerly peruse the same, were we to assume that only a little in the direction of advancement had been presented. While, however, but comparatively little, perhaps, in this department has been presented during the past year that can in every respect be regarded as real advancement, yet very many important clinical facts and experiences have been presented, which, in addition to establishing new theories, serve the equally important purpose of tending to show the fallacy of old ones. Therefore, not presuming to present all that has appeared on record in this light during the past year, I shall ask your indulgence while I enumerate such as have come to my notice or been deemed worthy of mention, together with some personal remarks regarding the same, and leave the matter, as regards the determination of the truthfulness and value of the so-called advances, for further investigation and your wise judgment to decide.

NOMENCLATURE AND CLASSIFICATION.

At the annual meeting of the American Medical Association two years ago Dr. Duhring read a paper on "Dermatitis Herpetiformis."[1] Under this head the author embraces the *impetigo herpetiformis* of Hebra, that affection termed by some authorities *herpes gestationis*, and a number of other rare conditions described by various writers under different names. He subdivides the disease into the erythematous, vesicular, bullous, and pustular varieties, according to the symptoms present. The propriety of thus grouping into one disease these various manifestations is still a matter of discussion among those making a special study of skin disease; and although the name and classification Dr. Duhring proposes are generally received with favor, the question as to whether these various conditions can justly be regarded as different manifestations of an individual disease remains yet to be settled.

A few other insignificant changes have been made in the classification of the American Dermatological Association.

ACNE.

In a paper read at the eighth annual meeting of the American Dermatological Association,[2] the use of sounds in the male urethra, as a supplementary measure in the treatment of acne, was proposed by Dr. Sherwell, of Brooklyn, who claimed the cure of two cases by this method. In support of the efficacy of this procedure in acne, may be found, in a paper read at the ninth annual meeting of the same Society,[3] by Dr. LeGrand N. Denslow, of St. Paul, other cases of acne reported, in which the same treatment was resorted to with apparent benefit. Dr. Denslow also reports, in the same paper, a case of general alopecia apparently cured by the same treatment. It is an almost universally conceded fact that many other remote troubles may be brought about by reflex urethral irritation; and as there exists a particularly intimate relation between the functions of the genital organs and the sebaceous glands, it seems more than probable, though I have had no experience in the same myself, that the procedure is a justifiable one, and in certain cases of acne and other sebaceous disorders, when the prostatic or other portions of the urethra are over-sensitive, will be found productive of beneficial results.

In this connection I may mention a line of treatment which I have found preferable to any other in certain forms of acne, and which was published about a year ago.[4] The principle of the treatment so far as I am aware, has not been referred to by other writers. Though applicable to all forms of acne it is more particularly useful in those forms where the lesions become deep and nodular, with little tendency

[1] Read at the Thirty-Sixth Annual Meeting of the Illinois State Medical Society.

[1] JOUR. AMER. MED. ASSOC., Aug. 30, 1884.

[2] Jour Cutan. and Vener. Dis., Nov., 1884.

[3] Medical Record, Nov. 7, 1885.

[4] Western Med. Rep., vol. vii, p. 20.

to pustulation on the surface, and described by various authors as acne indurata, acne cachecticorum, etc. In this condition the lesions, though apparently papular, are situated deep in or underneath the skin, and will invariably be found to contain, in their centre, pus; which, instead of coming rapidly to an inflammatory surface, remains the same almost indefinitely, with a tendency, rather, to burrow deeper. I am in the habit of lancing these lesions deeply with a Graefe's cataract knife, and invariably find pus. Now if these lesions were left, after being lanced and evacuated of the pus, they would immediately heal over on the surface and leave the pyogenic nidus to continue its work as before. I therefore, after lancing, pass a probe dipped in carbolic acid to the bottom of the incision, and then fill the whole from the bottom to the top with a piece of absorbent cotton, and allow it to heal from the bottom. In this way no lesion will fail to entirely disappear, leaving only an almost invisible scar. New lesions will of course now and then appear, which may be treated in the same way. Other measures will be kept up as deemed necessary in the meantime.

CURE OF LEPROSY.

Fox, of New York,[5] suggests the possible if not probable cure of leprosy when the proper *moral effect* can be brought to bear upon those patients; and reports in support of the same, the apparent cure of a case, wherein he attributes it largely to this therapeutic measure. He aptly says: "I need not dwell upon the well-known influence of the mind upon the condition of the body; no one doubts it, though few appreciate it." True it is that the moral effect upon patients suffering from this malady is greater in its depressing tendency, perhaps, than in any other disease, banished as they are from society and imprisoned for life, as it were, with the hope only of a most miserable existence and a lingering death.

PIGMENTARY SYPHILIDE.

Dr. R. W. Taylor, of New York, reports a case with illustration,[6] in support of the claim originally made by Hardy, that we may have, though rare, a pigmentary discoloration of the skin due to syphilis, which differs, and is to be diagnosticated, from chloasma, tinea versicolor, ordinary vitiligo or leucoderma, and all pigmentations found as relics of other eruptions. He concludes, as the result of his observation, that the unequal distribution of pigment which syphilis may cause may be either in the form of hyperpigmented spots, deficiently pigmented or leucodermatous spots, or the two combined. I may add to the above the report of a most typical case of the same that recently came under my own observation. The patient was a white female in the Cook County Hospital, Chicago, to whom my attention was called by my colleague, Prof. S. A. McWilliams, the attending physician. There was an unmistakable history of syphilis. Large patches almost as dark as the negro were to be found on various parts of the body, which gradually faded away to a surface almost if not quite destitute of pigment.

[5] Quarterly Bulletin, N. Y., Post-Graduate Medical School, 1885.
[6] Jour. Cutan. and Vener. Diseases, April, 1885.

CARBUNCLE.

At the annual meeting of the American Medical Association held at New Orleans, 1885, Dr. Bulkley read a paper on "The Treatment of Carbuncle Without Incision,"[7] in which he substituted for the old plan of crucial incision and hot poultices an ointment containing ergot and oxide of zinc locally, and sulphide of calcium and saline laxative with iron internally. By this method he claimed a shorter duration, less pain, and less scarring. For the same malady Dr. James F. Hibberd, of Richmond, Indiana, in a paper read at the Indiana State Medical Society, 1885,[8] advocated the local use of oleate of morphia applied with gentle friction every three hours. By this treatment Dr. Hibberd's cases, if not aborted, did not last over about a week and were attended with only a minimum of pain and soreness.

URTICARIA.

Lassar[9] cuts short the duration, and reduces the frequency, of violent attacks of urticaria by 24-grain doses of salicylate of sodium, repeated every two hours until three doses are taken. It is certainly well worthy of a trial, as the trouble is undoubtedly at times a very stubborn, not to say serious one.

RINGWORM OF THE SCALP.

Alder Smith[10] recommends, as a parasiticide in ringworm of the scalp, chrysarobin dissolved in chloroform—7 grains to the ounce. The chloroform, in addition to serving as a vehicle, dissolves the fatty matters out of the follicles and thereby facilitates the penetration of the chrysarobin.

A. J. Harrison[11] applies first a mixture of ½ drachm iodide of potassium to 1 ounce of liq. potassæ. When this has penetrated he applies a solution composed of 1 ounce of sweet spts. of nitre and 3 grains of bichloride of mercury. His theory is that the liquor potassæ softens the hair-bulbs and hairs and thereby allows the iodide of potassium to be conveyed to the bottom of the follicles. Then, when the mixture of nitre and bichloride of mercury is applied (the nitre being used merely because it forms a thin mobile menstruum) the mercury comes in contact with the iodide of potassium in the bottom of the follicle and the important chemical change which is there set up—the formation of the biniodide of mercury—he regards as very important and beneficial.

CHRYSAROBIN INTERNALLY.

The internal administration of chrysarobin for various diseases of the skin was suggested by Stocquart about two years ago.[12] Since that time his success has not been so great with the remedy, but he still speaks highly of its use in eczema and impetigo of children, stating that it decreases the blood supply to the part, thereby reducing the redness and secretion.[13] In regard to the curative properties of this remedy, administered internally, it may be stated

[7] Jour. Amer. Med. Assoc., vol. iv, p. 542.
[8] Indiana Medical Jour., May, 1885.
[9] Monatshefte für prakt. Dermatologie (Abst. West. Med. Rep., vol. vii, p. 246).
[10] Brit. Med. Jour. (Abst. West. Med. Rep., vol. vii, p. 60).
[11] Brit. Med. Jour., Sept. 5, 1885.
[12] Annales de Dermatologie et de Syph., Jan., 1884.
[13] Monatshefte für prakt. Dermatologie, Jan., 1886.

that it is a generally conceded fact that remedies which have any action upon the alimentary canal, usually diminish the supply of blood to other parts. This I have found to be particularly true in regard to cutaneous hyperæmia. It is my usual custom, therefore, when this condition exists, as is usually the case in eczema, to act upon the alimentary canal, giving usually a saline laxative. For the purpose of demonstration I have frequently in dispensary practice cured cases of eczema by this method alone, restricting of course, at the same time, the patient from scratching the parts. I may add, therefore, that from both theoretical and practical reasons I do not regard the drug as having any special merits as an internal remedy; nor perhaps the laxative above referred to over many other laxative or purgative remedies having an irritant effect upon the alimentary canal.

COCAINE.

Brief mention of the comparatively new and much talked of drug, cocaine, may perhaps be tolerated. As common sense should teach any intelligent person, this drug, if useful as a local anæsthetic in one location, must necessarily be so in any other where it can be properly applied and sufficiently absorbed. It, however, is not well absorbed by the skin, and therefore not as useful as in certain other localities. To control the itching in eczema, if there be sufficient abrasion to favor its absorption, it will be found useful in a strong solution; also in pruritus ani. I have not found it to be of much service in relieving the pain due to the removal from the face of superfluous hairs by electrolysis.

LITERATURE.

Of the new publications that have appeared during the past year, may be mentioned the "Photographic Illustrations of Skin Diseases—Syphilitic and Non-Syphilitic," by Geo. H. Fox; also, by the same author, "The Use of Electricity in the Removal of Superfluous Hair and in the Treatment of Various Facial Blemishes;" "A Manual of Dermatology," by A. R. Robinson, of New York; "Acne and Its Treatment," by Bulkley; "Practical Notes on the Treatment of Skin Diseases," of which the first two numbers, on "Diseases of the Perspiratory and Sebaceous Glands," and "Eczema," respectively, have appeared, by Geo. H. Rohé, of Baltimore; also a valuable Handbook of Diseases of the Skin," by Ziemssen.

ORIGINAL ARTICLES.

INTRA-VENOUS INJECTION OF SALINE SOLUTION IN COLLAPSE FOLLOWING HÆMORRHAGE.[1]

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In order that our profession may know of the benefit to be derived from the intra-venous injection of salt solution and its preference to either the transfusion of blood or the intra-venous injection of milk in the collapse of hæmorrhage, the following case is related;

On November 30, 1885, the writer, assisted by Drs. Bassett and Irwin, of Quincy, and King, of Payson, Ill., removed from the mouth of Mr. Thomas Seals, age 50 years, what was diagnosticated as a malignant epulis, springing from the left lower maxillary bone and filling the oral cavity. After the operation the growth was examined microscopically by Dr. Gilmer, of Quincy, who pronounced it a round-celled sarcoma. The shock of the operation was very slight.

Within two weeks the growth was seen to be recurring, but as Mr. S. was rapidly regaining strength it was thought safer to delay for a few days the second operation. December 19, 1885, just twenty-one days from date of operation, I was summoned to the house of Mr. S. In company with my brother, Mr. J. H. Rook, I answered the call, and found bright arterial blood streaming from the mouth of my patient. Rupture of the facial or lingual artery was suspected, but examination revealed no ruptured vessel, only a rapid oozing from the sarcomatous tissue. A cloth saturated with Monsel's solution of iron was thoroughly applied to the bleeding surface, which arrested the hæmorrhage. At the moment the hæmorrhage was checked Mr. S. fainted. He was laid upon the floor and assistance was sent for. Looking at my patient, who was in the unconscious and pulseless condition of extreme collapse, I determined to attempt his resuscitation by the intra-venous injection of a dilute saline solution. Asking for a bowl of warm water and some table salt, I proceeded to ligate the left arm. After waiting a few moments, the veins not distending sufficiently to show their location, the right arm was ligated, patient turned to his right side, where in a few moments the median basilic vein was seen. At this moment Dr. Lee, of Quincy, came in, and readily seconded my efforts. The skin was incised, a grooved director passed under the vein, into which was introduced a small trochar and about which was passed a catgut ligature to prevent regurgitation. I then took from my case a Mattson's rubber syringe, removed the nozzle with metal piece attached, filled the syringe with the warm water made slightly saline to taste, slipped the end of the rubber tube on the canula, and slowly injected the warm saline solution until a good radial pulse was produced and the patient returned to consciousness. The canula was then removed, the vein occluded by tightening the ligature, and the patient lifted from the floor to his bed, where in a few moments he was attacked with a severe chill. He was quickly surrounded with bottles of hot water, and in twenty minutes was resting comfortably. He experienced great thirst for some hours, during which he drank freely of cold water and milk, which were occasionally rejected by the stomach. No alcoholics were administered.

Notwithstanding the great loss of blood, our patient was able to undergo, four days later, his second operation, which was performed by Dr. Byrd, assisted by Drs. Lee, Irwin and myself. Since the date of

[1] Read in the Section on Surgery, at the Thirty-Seventh Annual Meeting of the American Medical Association.

the second, seven subsequent operations have been performed, the last being on April 27, 1886. Mr. S., though much enfeebled by the continued recurrence of the disease, is yet able to take much outdoor exercise. The quantity of blood lost at the time of the hæmorrhage was found by measurement to be one hundred and ninety ounces, while the quantity of salt solution injected was only eighty ounces.

Having seen and treated only the case narrated, does not perhaps entitle me to the privilege of formulating rules for the guidance of others, yet a little argument in favor of the method may not be without interest. It is a known fact that the blood corpuscles multiply very rapidly, and all that is needed in a case requiring transfusion is the injection of a suitable fluid in which the corpuscles can multiply. Such a fluid is the dilute saline solution, which will also prevent the remaining blood from coagulating. The dangers and difficulties attending the execution of other methods, for which the salt solution may be substituted, are apparent to all. In the process of immediate transfusion advised by Aveling we are met by the difficulty of finding a willing and suitable donor, the necessity of having a special transfusion instrument, and the danger of carrying coagulated fibrine into the circulation of the recipient. If the method of injecting defibrinated blood be employed, a suitable donor must be found, after which valuable time is consumed in extracting the blood and removing its fibrine. When employing milk for intravenous injection we are rightly advised to use only the warm freshly-drawn milk, a condition of that fluid not easily obtained in our cities.

In conclusion, I ask a trial of the salt solution, for I am convinced that it is as efficient, more practical, and safer than the transfusion of blood or injection of milk.

VENOUS BLOOD TUMORS OF THE CRANIUM

in Communication with the Intra-Cranial Venous Circulation, Especially the Sinuses of the Dura Mater.

BY WM. M. MASTIN, M.D.,
OF MOBILE, ALA.

(Concluded from page 344.)

PATHOLOGICAL ANATOMY.

Fortunately the collected cases represent a goodly number of authentic post-mortem sections, together with valuable surgical examinations; and consequently, these furnish pathological data of a character sufficiently definite to enable, it is believed, the formulation of rational and decisive conclusions—conclusions which are also added to and strengthened by marked symptoms and conditions, as manifested by numerous clearly analyzed cases without post-mortem demonstration.

A rapid rehearsal of the anatomical facts collectively, before entering into the examination and consideration of individual pathological points, seems advisable.

Moreau's Case.—There was a venous varix formed of congeries of veins, terminating in enlarged and dilated vessels which passed, by means of three perforations in the frontal bone, into the longitudinal sinus. For a large extent around these osseous openings the dura mater was inflamed and covered with pus,—a phlebitis and meningitis the result of the previous operative treatment. This is an example of venous varicose tumor.

Michaud's Case.—Two erectile growths, one over brow and eye-lid, the other located on the head. They were composed of a cavernous tissue, under the seat of which the bone was perforated by a multitude of little apertures giving passage to the veins coming from these structures in their course to the superior longitudinal sinus.

Foucteau's Case.—Occupying the site of the posterior fontanelle was a blood tumor which communicated directly with the superior longitudinal sinus through a single opening in the fontanelle the size of the little finger, by means of a tubular pedicle of which the cyst appeared to be an expansion. The tumor was composed of two principal cysts with a small accessory pouch, which were lined by a vascular serous membrane. This serous membrane was of the same character as, and continuous with, that of the cerebral sinus through the above-mentioned pedicle. Thus it would appear that this was a blood-cyst formed by a hernia of the sinus through the unclosed posterior fontanelle, in which only the serous coat of the sinus was recognizable by the eye alone.

Demme's Case.—Located on the top of the head (in the middle of the sagittal suture) was a tumor composed of a pouch the interior walls of which were covered by fibrinous laminations, of different color and consistence, according to their respective ages, as in a true aneurismal sac. In the coagulum in contact with the bottom of this pouch was a funnel-shaped depression which proved to be the entrance to an opening leading to the cranium. The superior longitudinal sinus was distended and filled with a coagulum, and was considerably dilated at a point corresponding to the external tumor with which free communication was demonstrable. The external wall of the cyst consisted of the normal scalp, but the other layers were composed, very evidently, of the sinus walls protruding through the osseous opening. Traction upon the tumor showed that the opening in its base consisted of a tubular pedicle connecting its cavity with the sinus. The pericranium did not enter into the formation of the cyst coverings, but was intimately attached to the circumference of the skull opening and the pedicle, showing that it had either ruptured or been absorbed. The cranial tissue was thinned throughout the space occupied by the tumor, rather transparent, and in a state of rarefaction. The walls of the sinus were thickened, especially the fibrous elements, but otherwise little altered. The microscope was employed in the examination. This presents a case of true ectasia of the superior longitudinal sinus through the anterior fontanelle, probably the anterior angle.

Acland's Case.—The growth was a venous capsule communicating through a foramen in the protuberantia occipitalis, by means of a fibrous tube, with the

Torcular Herophili, thus putting the cyst in communication with the intra-cranial venous circulation. Brain greatly enlarged, and anterior horn of one lateral ventricle distended with serum (hydrocephalus). Here is shown a circumscribed venous varix of an emissary vein (emissarium occipitale) passing to the Torcular.

Bruns' Case.—Located over posterior fontanelle, with a thick pediculated base. Surgical examination after strangulation and removal of the growth demonstrated the structure of the formation to be a mass of areolar tissue containing a bunch of greatly thickened veins, in which were several spherical enlargements or dilatations. Beneath the cicatrizing ulcer left after removal of the tumor the underlying fontanelle was plainly felt. This is another instance of varicose emissary vein or veins passing to the sinus through the posterior fontanelle or below it.

Busch's Case.—A large fluctuating tumor, occupying the superior occipital region, including the small fontanelle. Contained a quantity of dark, viscous blood. The fluid situated between bones of skull and pericranium, and was in communication with the sinus. Several vessels extending from the tumor to superior longitudinal sinus were divided by the post-mortem incision. Character of tumor not definite, but possibly a venous varix.

Flint's Case.—A tumor in occiput. Contained venous blood, and communicated with superior longitudinal sinus. Probably an example of ectasia of the sinus.

Jacobi's Case (Morbid Specimen).—A large cyst filled with coagulum located on occiput. Perforating the os occipitis was a large and long opening or canal through which the sinus protruded as a hernia under the scalp. The question arises, Was this not a varicose occipital emissary vein traversing its normal but enlarged foramen? However, it is received by several authors as a true hernia of the sinus, and, with the unsatisfactory data at hand, I must now also accept it as such.

Melchiori's Case.—Located on left parietal bone. Tumor composed of a net-work of empty veins ranging in size from a thread to a pigeon-quill, freely intercommunicating, and finally terminating in a common trunk about the thickness of a goose-quill. This trunk passed through the galea aponeurotica capitis, and piercing the skull at the lower and posterior edge of the parietal bone, emptied into the transverse sinus where this canal lies on inner surface of temporal bone. There was meningitis, and all the sinuses were filled with partially suppurating clots, although without disease of their walls. This was a case of varix of the external cranial veins communicating with the sinus.

Andrews' Case.—On removal of the scalp a number of enlarged and distended veins were seen about middle of the occipital bone. Just below the external protuberance was found a depression in the bone of one-third inch in diameter and one-fourth inch in depth, and covering which was a membrane that appeared to be formed of thickened walls of a distended vein, and upon puncturing this venous blood escaped. The depression was then found to be a complete perforation, about the size of a crow-quill, which led into the sinus. There were tubercular deposits in brain, and serous effusion into both membrane and ventricular cavities. This was a case of circumscribed varix of the emissarium occipitale.

Pott's Case.—A blood collection on top of head. Operation disclosed depressed fracture with a sharp fragment piercing superior longitudinal sinus.

Hutin's Case.—Blood pouch on right frontal region, communicating, through an old traumatic bone perforation, with the superior longitudinal sinus. Osseous atrophy also evidenced.

Hutin's Case.—Fluctuating blood pouch on right side of summit of head, between osseous vault and pericranium. Perforation of under and right side of longitudinal sinus by a thick bone splinter, thus placing the blood sac in communication with the sinus. Another blood collection internally between dura and skull, which also communicated with both sinus and external tumor.

The individual points which call for consideration are these: I. The general character of the tumor; II. The anatomical relations of the tumor, including the nature of the tissues composing and limiting it; III. The contents; IV. The method of communication with the intra-cranial circulation.

I. *The General Character of the Tumor.*—This tumor may be defined as, an indolent swelling external to the skull, in the form either of (i) a cyst—single or compound—or of (ii) a varicose or an erectile growth, containing venous blood, and communicating, directly or indirectly, by one or many skull perforations—normal or pathological—with the intra-cranial venous circulation.

The indolent nature of the growth is too fully and prominently shown in the detailed history of the cases to necessitate further notice,—the only inconveniences complained of in the large majority of instances being subjective, or due to the annoyances of its particular location.

(i). The pouch—or cyst—variety is, as its name implies, composed of a pouch or sac variously formed, and the character of this formation being dependent upon the cause in operation. It can be asserted, therefore, from an etiological standpoint, and largely sustained by necropsic evidences that this form is encountered in circumscribed dilatation of an emissary vein (fusiform); in ectasia or hernia of the sinus and in dilatation of a diploic vessel (sacciform); in cranial perforation the result of a rarefying osteitis, and in the greater number of cases produced by direct injury, including both skull fracture and rupture of an emissary vessel (false). These features mark this variety as being closely allied to aneurismal formations in general, and whereas these characters are met with in the majority of cases, at the same time they cannot be considered so characteristic of this division, as was formerly my opinion.

Several post-mortem dissections, with every physical indication in many other cases without the conclusive proof of autopsic examinations, furnish sufficient demonstration for these conclusions.

(ii). In the other form—the varicose variety—the tumor is composed of tortuous and varicose veins

(chiefly the emissaria Santorini) with numerous dilatations, or, occasionally, of a structure resembling true erectile or cavernous tissue (Michaud's case). These varicose formations may be in both fine and gross bundles held together by a meshwork of areolar tissue, and consisting of simple tortuous veins alone or combined with dilatations. Many cases in all three of the classes, the congenital, spontaneous and traumatic groups, illustrate this variety.

II. *The Anatomical Relations of the Tumor.*—Taking the coverings of the cranium in their order from without inwards, I find the anatomical location of these formations may be, (a) between the integument and the cranial aponeurosis; (b) between the fibro-muscular layer (aponeurosis) and the pericranium; (c) between the pericranium and the bone; and (d) occasionally extending internally between the skull and the dura mater.

These conclusions, which were reached in my previous paper, were then based upon the recognition chiefly of one principal variety of this formation, namely, the *diffused*, where the effused blood escapes beneath the scalp tissues; and even with a more extended knowledge of the etiology and pathology, including the wider and more comprehensive classification now given to the lesion, these relational divisions are, in the main, still appropriate.

(a) The situation of the growth between the skin and the epicranial aponeurosis, although not determined by the positive evidence of actual dissection, can be considered as, at least, probable, especially in certain injuries where all the soft tissues, together with the bone, are torn through or divided except the skin, leaving that covering intact; or, again, in those cases where absorptive action is particularly prominent; and, also, in long-standing cases with a disposition to rapid tissue change, hastened, perhaps, by increased blood-pressure. But clinical observations alone are not adequate to fix this exact seat, for, it must be noted that the sensation and appearance of the swelling are very deceiving in the impressions they convey of the composition of its walls. Thus in many instances both the skin and aponeurosis may be so extremely thinned or attenuated as to impart to the touch the sensation of only integumentary thickness, and accompanied, at the same time, by a violet hue as if the contained blood was immediately beneath the cutaneous covering. Furthermore, the probability of this position is re-enforced somewhat, if the first proposition of Demme be looked upon as tenable, that is, rupture of an external cranial vein from injury, producing an *epicranial* or *aponeurotic* blood-collection which results in a cyst, and finally in communication, by various ways, with the sinus through absorptive changes in the underlying tissues. Under such circumstances it can be readily appreciated how a venous blood-tumor of this description may be located between the integument and the fibro-muscular layer of the scalp.

Again, in thickening and dilatation of the cranial veins, the diseased action may originate in and be confined to that portion of the vein lying between the skin and the aponeurosis, and thus the tumor be so situated, as is shown in the case of Melchiori, and some others.

(b.) I am inclined to consider the location of this formation between the aponeurosis and the pericranium as its most frequent seat,—an opinion, it should be remarked, that applies particularly to those cases arising from within outward or from the interior of the cranium. This position was demonstrated by post-mortem examination in a number of instances; and theoretically it may be looked for in the majority of these tumors due to spontaneous perforation of the skull, cranial fracture with sinus wound, ectasia of the sinus, and disease of the diploë veins, in which, especially the two first named, the periosteum is, in all probability, lacerated, and the blood extravasated in the cellular tissue beneath the more movable aponeurosis. Opposed to this view, however, is the opinion of Stromeyer, who expresses the conviction (*Maximen der Kreigsheilkunst*, S. 362, 1861) that the cyst is always beneath the pericranium. He declares that the case of Dufour's in which the necropsy exhibited the bone covered by a thin periosteum is not opposed to his views, since all bone reproduces its periosteum when deprived thereof. But as evidence that the assertion cannot be applied unconditionally to all cases, it is only necessary to refer to the simple example of Demme's case, where, with the aid of the microscope, in a hernia of the sinus through the anterior fontanelle, it was seen that the pericranium did not enter into the cyst coverings, but was perforated and intimately attached to the circumference of the skull-opening and to the pedicle of the tumor as it passed into the cranium.

(c) Notwithstanding the assertion of Stromeyer and others, that the cyst (pouch-variety) is always seated between the pericranium and the bone, I am forced to regard this location as rare; or, at any rate, it is not the rule. This opinion is held not only from the fact that I have succeeded in finding but two examples of such a location, but also from the anatomy of the periosteum and the associated tissue involved. Such, however, may sometimes occur, of which the testimony of Stromeyer with the illustrative cases of Busch and Hutin present sufficient proof.

(d) The location between the pericranium and the bone and extending internally between the skull and the dura (vide Hutin's case) is accidental, and consequently exceptional, and does not demand further consideration. It can occur, obviously, only in serious injury to the cranium with both internal and external hæmatoma, and is not particularly connected with this class or character of tumor.

From the foregoing remarks it is very apparent that the coverings or walls of these venous formations of the head communicating with the intra-cranial circulation, are absolutely dependent upon the etiology and special form of the lesion. For example, the tunics of such a growth arising in diseased action of the coats of the sinus with protrusion through the bone, cannot be compared with simple blood effusion from skull and sinus perforation, under the scalp, and, therefore, its location and the composition of its walls must necessarily vary with the form and mode of origin of the tumor.

Again, each and all of the tumor-coverings may be normal in texture and relationship to each other, or

considerably modified or changed by diseased or natural processes, and, indeed, even differing according to the age of the individual affected.

III. *The Contents.*—Besides normal fluid venous blood, which is of course always present, this tumor may contain occasionally solid elements; but, as would be naturally anticipated, such substances seem to be confined to the cyst or pouch-variety, and, perhaps, in certain examples of the varicose form where gross dilatations with thickened walls exist.

These solid elements may be of the character of condensations from the cellular tissue, or blood concretions (phleboliths) as indicated in one of Middeldorpff's patients, and also the case of Jules Dubois, where, after complete emptying of the sac, a "core-like" substance about the size of a lentil was felt; or, again, the cyst may be lined by laminated fibrinous deposits identical in formation and composition with aneurismal coagula, and of which the case of Demme furnishes an excellent illustration.

In the instance mentioned by Foucteau three cysts were present,—the third or accessory cyst being filled with serum. But this was, undoubtedly, of accidental formation due to recognizable causes (witness the occasional formation of similar cysts in encephalocele and meningocele), and hence, although noteworthy, is without any associative significance.

IV. *The Method of Communication with the intra-Cranial Circulation.*—The manner of communication (direct or indirect), and the nature of the passage connecting the tumor with the dural circulation (normal or abnormal skull-openings), are as different and various as the causes which originate the lesion, and, indeed, it may be considered as bearing a very intimate, if not constant, relation to the etiology.

When the union takes place through normal or preëxisting cranial apertures, as the emisary foramina and the fontanelles, the perforation partakes of the usual qualities and appearance of the natural and healthy tissues forming the opening, although in some cases they may be changed, in both size and contour, and, perhaps, with alteration in the quality of the bone. This method of connection is exemplified in hernia of the sinus through the fontanelles and in varicose dilatations and enlargements of the emissaria Santorini.

When the communication is effected by means of abnormal perforations then the distinctive qualities and features of the communicating opening and passage must be largely influenced by the causative agent in operation, that is, whether it be produced spontaneously or by appreciable traumatic forces, together with the probable changes caused by the duration of the tumor.

In the instance of the former where the glandular Pacchioni appear to be the exciting or active causes of the resorptive changes in the bone—a rarefying osteitis—an aperture may be looked for of moderate capacity, and presenting an irregular and uneven outline; whereas a rarefying osteitis the result of, possibly, extensive contusion, especially if located on the frontal region with involvement of the diploë, may be attended by a very extensive loss of substance, forming an opening with jagged edges, according to the extent of the osseous tissue subjected to the exciting cause.

In the latter or traumatic cases, the orifice is directly dependent upon the character and severity of the injuring force, that is, it may vary from a delicate crack or minute puncture with displaced spiculæ to an extensive loss of the cranial wall; or, again, it may assume the features of a wide fissure, as in suture separation with displaced bone.

The number of the apertures, also, is dependent upon the special features of the tumor, varying from one to a large number, but where they are numerous, or, at least, several in number, the tumor is probably composed of an aggregation or bundle of fine varicose vessels, which penetrate the skull by exceedingly small foramina.

Again, the communication may be either direct or indirect—a condition which also stands in a certain ratio to the cause. Examples of the direct connection, where the tumor-cavity opens immediately into the sinus, are shown in spontaneous perforation through the fovea glandulares, ectasia of the sinus, and in some traumatisms.

The indirect, where the bone perforation is sinuous, or, in other words, there is a medium, in addition to the perforated bone, through which the tumor is connected with the sinus, is illustrated in all dilatations and varicosities and ruptures of the external veins, or where the communication is through the intermediary of the diploic canals.

Therefore, if any generalizations can be based on the revelations already made by clinical and post-mortem investigations, it can be safely affirmed that, First, in the *simple* or *diffused* class the cranial perforation is usually of abnormal production or formation, single, of moderate size, irregular contour, and direct; and, Secondly, in the *venous* or *vascular* class the communication takes place more frequently through a normal skull opening, is variable in size and number, of a definite shape, and indirect in its course—but exceptions to this may exist, as seen in certain cases of rarefying osteitis with diploic involvement.

SYMPTOMS.

In the majority of cases the presence of the growth produces so little discomfort or uneasiness, and in some instances not the slightest inconvenience, other than that of location, is experienced by the patient, that it is scarcely possible to name any general symptoms which may be regarded as characteristic of the lesion.

Among such indefinite or variable symptoms encountered, however, *vertigo* or *dizziness* is the most prominent and most constantly present. In many of the cases this symptom was complained of, especially when the tumor was at its maximum volume, but not always appearing spontaneously, and more often the result of posture with the head dependent or flexed; or produced by compression of the growth, particularly such as to cause the rapid forcing out of its contained blood, although, on the other hand, once or twice it was noted that slight pressure or supporting the tumor by the hand lessened or relieved the

vertigo. But it may be stated that, as a rule, when dizziness is complained of it is the result of those causes which produce increased blood-pressure, or determination of blood to the head, such as compression of the jugular veins, position, muscular exertion, mental emotions and so forth.

Again, it is possible for pressure upon, or forcible reduction of, the tumor to cause serious cerebral disturbance, amounting almost to compression, as is vaguely referred to in one or two records; but such is rare, and must be regarded as a very infrequent attendant.

Accompanying vertigo, although much less frequent, *pain* is sometimes met with, and finds expression chiefly in the form of headache. It rarely arises spontaneously, and when present is usually associated with increased tension of the tumor, or, in other words, increased blood-pressure; and in some instances it was only produced by direct pressure exerted upon the swelling. Pain localized in, or confined to the vicinity of, the tumor is mentioned in one or two cases.

The local symptoms are much more characteristic and reliable than the general or systemic ones above mentioned.

The most conspicuous point in the examination of the tumor is its *seat* or location, which, in a general way, is nearly always in the tract of the superior longitudinal or some other sinus, or adjacent thereto; and, consequently, the proximity of a blood swelling to the course of any of the cranial sinuses, especially if presenting obscure symptoms, should be suggestive of this variety of sanguineous formation. But, as naturally anticipated, its actual or anatomical situation is positively dependent upon the form or variety of the lesion. Thus it may be briefly stated that the *diffused* form the result of a rarefying osteitis, especially erosion or resorption of the skull by the Pacchionian bodies, is found in or near the median line on the upper and posterior part of the cranial vault, that is, on either side and along the course of the saggital suture (in which position the glandulæ Pacchioni are in greatest numbers), at its junction with the lambdoidal, and even extending a short distance on each side along the latter suture.

In the second or *venous* variety the situation is again influenced by the special structures involved. First, if the growth be formed at the expense of an emissary vessel it will be located on that portion of the cranium where these exist, and particularly over the site of the parietal and occipital veins, which are the larger and most often implicated; Secondly, if a true varix sinus exist involving the coats of the longitudinal sinus, then the pouch is more frequently located over one of the fontanelles; whereas, thirdly, in involvement of the diploic system of vessels it is apt to be confined to the os frontis and ridges of the occipital bone, but particularly the forehead, in which localities the diploic structure reaches its most complete and highest development. In traumatic cases the location is governed, of course, by the portion of the skull receiving the injury, but usually such forces are applied to the frontal and anterior-summit regions of the head.

The moderate *size* of the tumor together with the direct influence exerted over its volume by certain conditions, are noticeable features. Even when distended to its fullest capacity it is usually of medium dimensions, although several cases are mentioned where it attained the volume of a large apple; whereas when quiescent, that is when the swelling is relaxed or at its minimum enlargement, the growth is quite small and sometimes scarcely perceptible if not completely indiscernible.

These changes or alterations in the size of the growth are very characteristic, and can be seen and felt to take place under those conditions affecting its distension and relaxation: the tumor slowly rising and swelling up in the dorsal decubitus or any position with the head lowered; by interference with the proper return of venous blood from the interior of the cranium, as in compression of the jugular veins, forced expiration, crying, coughing, sneezing, and the like; occasionally by a full stomach, muscular exertion, or mental emotions; and, rarely, during the normal respiratory effort; however, in converse influences or those conditions lessening or reducing expansion or dilatation, the tumor recedes gradually to a lower level, and often entirely disappears.

The *color* of the swelling in most instances is normal and does not differ from that of the healthy skin, but this may be materially influenced by the consistency or thickness of the tegumentary coverings, and may also vary with the degree of distension of the tumor. Thus, when the walls are very thin it may assume constantly a purple or violaceous hue, or again the discoloration of the walls may be recognized only during distension, and fade away to a natural color with the relaxation of the tumor. Furthermore, changes in its color may be the result of coexistent disease of the skin of the tumor itself, namely, of a nævoid character, as was noted in several cases; but such a complication is infrequent, and when it does occur may be looked for, everything being equal, in congenital in preference to the other classes.

The influence of *head posture* on the volume and resistance of the tumor is so apparent to both the touch and eye that, manifesting itself as it does always, perhaps, in this affection, the symptom of *dilatation* and *reduction* produced thereby may be reasonably regarded as a pathognomonic character. Without an exception, I believe, this effect of position was decided and marked,—the tumor being felt to attain its maximum volume when any position with the head lowered was assumed, and even simply bending the head forward producing very evident increase of size and tension; whilst the reverse attitude, with the head fixed and erected, being attended by a diminution in both resistance and bulk.

Similar results are produced by *compression of the jugular veins.* This was employed in a number of instances, producing unequivocal impression upon the growth, and its influence may be taken as a rational symptom, and one of special value when associated with additional evidence; for, it is needless to remark, its range of applicability is much too wide and extended to be alone of diagnostic import in this type of sanguineous tumor of the skull.

Probably next in importance to postural influence (in the pouch-variety) may be regarded the symptoms of *compressibility* and *fluctuation*, which taken together furnish positive evidence of a fluid-containing pouch or cavity with an intra-cranial outlet. In all the cases of the pouch—or sac—form these symptoms were observed, and were among the chief distinctions—the swelling readily, and nearly always completely, but slowly subsiding under continuous lightly applied pressure with the hand or fingers, and tardily redilating upon the removal of the compressing force,—and distinctly conveying to the touch the sensation of a sac filled with fluid, which was being emptied.

The rapidity and ease with which pressure accomplishes evacuation of the pouch is dependent, necessarily, upon the freedom and directness of the communication with the cranial cavity, but, as a rule, the reduction is rather slow and gradual.

Another symptom of considerable weight is the ability in many instances to recognize by the finger, after reduction of the growth, some *osseous alteration*, or even depression or indentation in the skull, corresponding to one or more openings leading to its interior, and which may be of considerable dimensions.

Furthermore, *puncture* by means of a trocar and canula with direct exploration of the bone, may disclose the existence of the aperture where it had eluded careful digital search. However, even such unsuccessful efforts to discover the communicating entrance should not be considered as conclusive evidence of its non-existence, for failure to detect the osseous perforation by this method occurred in several cases in which a subsequent incision or post-mortem examination demonstrated its presence.

The *sensation* or feel of the tumor-walls, as conveyed through manipulation, is to be taken into account in a description of the symptoms. In uncomplicated cases of the pouch-variety, especially the simple diffused form, after being emptied, the sensation is that of a loose, lax, movable covering of healthy skin tissue, of different degrees of thickness according to its constituents; whereas if partaking of aneurismal qualities, that is, with fibrinous depositions on its interior surface, these are recognized as usually irregular but firm or solid masses occupying the substance of the walls, or, perhaps, the cavity of the growth. In the varicose-type there is readily discernible after evacuation or reduction of the swelling, a spongy mass or substance, varying according to the character of the varicosity, but which nearly always remains as an irreducible structure between the fingers.

Pulsation and *bruit* require notice only because they are mentioned as occurring in several cases. They are to be regarded in the light of extremely rare accompaniments, and practically must be entirely eliminated from the list of symptoms. When met with they are explicable on the ground of contiguity to the cerebrum and a dural sinus or artery.

Finally, a symptom of no indifferent significance is that attending the employment of *circular compression*. This constriction may be applied either to the head, by means of a band or cord tightly drawn around the cranium with compresses in the temporal fossæ, or to the tumor itself, as by a ring or similar apparatus closely encircling the base of the growth. By this means the external or superficial venous blood current is largely separated from the internal or intra-cranial venous circulation, and the subsequent manipulation of the growth now enables one to decide from which system of veins the blood supply is derived.

The method was employed quite a number of times, and in each instance fully demonstrated its utility and importance as a diagnostic measure.

DIAGNOSIS.

In uncomplicated cases, the history of the lesion, its location, want of marked elevation, and slow progress; the usual normal color and texture of the integument of both the tumor and adjacent surface; the positive influences of the posture coupled with those resulting from pressure of the jugular veins; compressibility of the growth—its easy and usually complete but slow evacuation; frequent fluctuation; the recognition by the finger or exploring needle of bone alteration; and very often of perforations in the cranium; the absence of bruit and pulsation; the effect of the application of a circular compression; vertigo produced by certain positions and movements; and lastly, the demonstration by puncture of the presence of venous blood filling the tumor, constitute a symptom-group scarcely to be misinterpreted. Hence, as a rule, the diagnosis should not offer specially confusing or obscure features.

There are, however, a number of lesions presenting symptoms in common with this formation, which might claim consideration in a nice or accurate differential diagnosis, and, therefore, the principal of these affections call for a brief reference:

Thus a certain degree of resemblance is borne to (1) meningocele and (2) encephalocele, or (3) superficial nævus coexistent with these; (4) cephalhæmatoma; (5) simple subcutaneous venous erectile or vascular tumor (including, possibly, the capillary variety); (6) lymphatic vascular tumor; (7) certain cystic tumors; (8) venous aneurism; (9) rarely aneurism of the middle meningeal artery associated with bone erosion; (10) fungus of the dura mater; (11) pneumatocele; (12) traumatic cephalhydrocele; and, under rare circumstances, (13) circumscribed abscess, especially where skull perforation has taken place.

In those instances, however, where an individual case offers specially confusing difficulties, or, at least, where questionable points prevent a definite conclusion, the demonstration of a tumor containing fluid, completely or partially reducible under lightly applied pressure without producing cerebral disturbance, directly influenced by posture and circular compression, and of which puncture or aspiration shows the fluid to consist of living venous blood, would be quite sufficient, against otherwise doubtful symptoms, to confirm the diagnosis.

PROGNOSIS—PROGRESS.

Analysis of the cases collated shows that, this class

of sanguineous tumors if left to nature and not disturbed by treatment, does not incline to a fatal termination; and, therefore, the prognosis may be looked upon as favorable in all the types of the lesion as far as life is endangered or even serious impairment of health is concerned, and, indeed, spontaneous cure is said to have resulted in one recorded instance.

Where, however, surgical interference is resorted to with the view of a radical cure or permanent resolution of the growth, then the prognosis becomes of very different import—assuming an important, if not serious, phase—and being materially influenced by the special type or variety of the tumor involved, with also the particular operative method adopted.

In the large majority of those instances where no active surgical treatment was employed, and which were kept under observation for a longer or shorter period, there was not only no marked change in the attending symptoms, but the progress was noticeably slow—there being but little tendency evinced to extension or any decided change whatever. Thus, in illustration of the general stationary tendency of these tumors after a certain size is attained, it may be mentioned that of twelve cases, embracing all the classes and the several types, which were followed up, eight were noted as remaining unchanged after five, twelve, fourteen, twenty, forty, forty-three, forty and seventeen years, respectively; and in the latter instance the growth disappearing spontaneously after a long examination, including repeated palpations. But in two other instances moderately rapid growth was reported,—in one of which the progress being slow for twelve years, and then in the succeeding four years rapid increase took place, with the development at the same time of a second tumor or sac communicating with the first.

Whereas, on the other hand, among seven patients upon whom operative measures were practiced, comprising free incision, strangulation by ligature of the base, the actual cautery, and electro-puncture, there were four deaths, two each from immediate hæmorrhage and suppurative phlebitis with meningitis. The three successes which resulted were respectively from strangulation by ligature, incision, and electro-puncture. It must be referred to, also, that the two cases of M. Azam were unaffected, apparently, in their symptoms and progress by the repeated punctures of the pouch which were practiced for diagnostic purposes.

TREATMENT.

Notwithstanding the fact that *palliative* or protective measures have received the strong endorsement and recommendation of the larger number of writers upon this subject, and by some is regarded as the only treatment to be adopted (v. Gross, Dupont, and others), and although almost universally employed, with but few exceptions, in the collected cases, the histories of these prove that such methods exercise hardly any, if, indeed, not being wholly without appreciable effect over the progress or course of the affection, and hence must be declared not only fruitless, but, in some instances, positively harmful.

This can scarcely serve as a matter of comment when the anatomical and pathological characters of the lesion are considered, and, therefore, beyond the mere statement of the results of palliative treatment, this portion of the subject does not demand further consideration.

Measures having a radical or *curative* object in view, were of two forms, namely, direct compression of the growth, and certain operative procedures.

The former, or the application of *direct compression* to the tumor, occupies a very similar position to that of palliation, as far as exerting any retarding or inhibitory influence over the course of the disease; and, at the same time, on account of the effect produced in several trials of the method, it should be regarded also in the light of a dangerous or hazardous operation when indiscriminately employed, and especially so in certain varieties of the lesion. Thus, in a case of probable varicose emissary veins, M. Azam punctured the tumor and practiced steady and continuous pressure for twenty days, but not the slightest benefit whatever was obtained, and the patient was dismissed in an unchanged condition.

Hecker applied compression for a considerable time without effect, in a case of frontal diploic tumor with loss of osseous tissue; continued and carefully regulated pressure proved equally useless in the patient of Nèlaton and Richard; and the efforts of Hutin to cure by compression, with leaden and silver plates, a blood-pouch resulting from cranial fracture and accompanying sinus-wound, were likewise ineffectual. Again, Dubois, in a case of frontal tumor, probably of the diffused variety, first attempted compression by bandages, but without benefit or change; then later forceps-pressure was employed for forty-eight hours, but such excessive pain associated with cerebral symptoms of an ominous character, and decided reactive or inflammatory changes both within and without the sac, were provoked, that the attempt was necessarily abandoned. This was also devoid of beneficial result.

In Verneuil's patient spontaneous subsidence of the growth took place after repeated and prolonged handling and palpation of the tumor. Such manipulation should be reckoned as a form of compression, but in this instance the observation loses its value because of the inaccuracy of the history, failure to follow up the case for a sufficient length of time, and the consequent doubts expressed by the reporter himself.

The nature and extent of the *operative* interference employed, are represented by the following methods, viz.: free incision, and incision combined with cauterization; constriction or strangulation of the base; the actual cautery; and electro-puncture.

The operation of laying open the tumor by *free incision* was resorted to in four instances.

Pott, mistaking a diffused form of the lesion following direct wound of the sinus from fracture in the person of a lad, employed incision and trephining with a favorable result.

In the case of an adult suffering from a growth composed of varicose venæ emissaria, Moreau divided the tumor directly across, and, in order to staunch the alarming hæmorrhage which ensued, he

made frequent cauterization of the wound with antimony. Death took place on the fourth day from suppurative phlebitis and meningitis.

Flint's patient was an infant with a probable ectasia of the sinus through the fontanelle, in whom immediate dissolution from hæmorrhage was the consequence of an extensive incision.

The last instance is the patient of Hutin, who had an old blood-tumor of the cranial vault produced by injury. During a subsequent attack of erysipelas, in which he became unconscious, this swelling was taken for a pus collection and freely incised. Venous blood flowed abundantly, but pressure easily controlled it. Pleuro-pneumonia caused a fatal termination.

In two other cases of probable varicose emissaries, small punctures were made to aid diagnosis, but without observable effect.

There are two examples of constriction or *strangulation*. Mersemann's patient was an infant at the breast, with a venous tumor of the varicose type. Complete strangulation effected a cure. Foucteau encircled the base of a large tumor on the head of a child, which proved to be a sinus ectasia, with a stout ligature and then punctured the growth. A large quantity of blood was withdrawn, and the child succumbed on the following day, from hæmorrhage, he believes.

The *actual cautery* was employed by Michaud in a varicose formation. Erysipelas and meningitis followed the application, and death took place therefrom on the seventeenth day.

But one case, also, represents the use of electro-puncture. This was in an adult upon whom Bardeleben successfully punctured the tumor, which was probably a varicose formation, communicating with the longitudinal sinus.

Summing up the evidence furnished by these several cases of operation, it is seen that incision gives one cure in four, and that one being of the traumatic diffused form; strangulation gives one cure in two, the successful issue being of the varicose type; the only instance in which the actual cautery was employed—a case of varicose emissary veins—ended fatally; and the single use of electro-puncture in a similar form of the lesion was attended by gratifying results.

The causes of death in these cases brings up the question of the dangers to be apprehended from surgical or operative measure, and which may be embraced by phlebitis, attended by thrombosis and embolism, meningitis, septicæmia, hæmorrhage, air-embolism, and serious cerebral disturbances.

Phlebitis, meningitis and septicæmia are so closely connected in the present relation that they may be properly discussed under the same heading. From this cause two deaths took place out of seven operations, and therefore on this account and for apparent anatomical reasons such a danger assumes an important and just significance. This is furthermore borne out by well-known clinical examples, and also by the experiments of Schellmann (v. Bergmann, l. c.) who found that the chief danger resulting from sinus-wound was the formation and subsequent disintegration of the thrombus—leading to septicæmic infection. However, the aceptic management of wounds which characterizes modern surgical practice, associated with our increasing enlightenment concerning the tolerance of the venous system in general, and especially, in the present instance, the veins of the brain and its enveloping tunics, to operation wounds and accidental injuries, not only marks a great scientific advance in surgery, but has reduced in a wonderful degree the risks and dangers to be apprehended therefrom; and consequently revolutionized our ideas of the once dreaded inflammatory and septicæmic processes.

Although two fatal results are reported in our collection from immediate hæmorrhage, I cannot regard this danger from sinus-wound in the same light as it is evidently looked upon by many authorities. Wounds of the dural sinuses if extensive are, undoubtedly, attended by profuse and even alarming loss of blood, but the methods at our disposal for controlling such hæmorrhage are both trustworthy and easy of application.

Thus the efficiency of simple pressure in arresting hæmorrhage is exemplified not only in the special lesion under consideration by the cases of Pott and Hutin, with those cases which were simply punctured, in which pressure sufficed to permanently staunch all bleeding, but also in different injuries and wounds of the sinuses, as illustrated by the patients of Reid (*Edinburgh Med. Jour.*, April, 1864), Sands (*Annals of Anat. and Surg.*, vol. viii, p. 100, 1883), Hopkins (*Annals of Surgery*, July, 1885, p. 67), and other easily cited instances, and more recently by the experiments of Senn, contained in an admirable article on the subject of Air-Embolism, read before the American Surgical Association, April, 1885 (*v. Society Transactions*, 1885, also *Annals of Surgery*, June, July, August and September, 1885).

Numerous other authorities might be adduced in confirmation of the efficiency of pressure, but, beyond the additional mention of the paper of Hector Cameron (*Lancet*, May 24, 1884), in which is shown that in many, or the majority of, instances only the gentlest pressure is required to stop blood-flow from a wounded sinus, further citations would be superfluous.

If I have spoken in commendatory terms of pressure as a hæmostatic measure in sinus injuries, I believe that I am warranted in speaking in an equal, if not more positive, manner of the ligature and suture, especially applied laterally. It is true that Senn (*l. c.*), and he is not alone in this opinion, considers suturing the sinus (including, evidently, lateral ligature) as unreliable and in most instances anatomically impossible, but the successful instances where such measures were adopted are sufficiently numerous to justify my expressions of confidence in the proceeding; and, as furnishing clinical and physiological support to the practice, the experiments of Schellmann, already referred to, demonstrated the important fact that wounds of the sinuses heal without causing obliteration of the sinus,—the wounded wall becoming thickened in the reparative process but the lumen of the vessel remaining unobstructed.

Such successful employment of the lateral suture and ligature in the cases of Brinton (*Philadelphia Med. Times*, vol. xii, p. 577, 1881) and Parkes (*Annals of Anat. and Surg.*, vol. viii, p. 118, 1883), are by themselves adequate testimony of its practical application and reliability.

Proximal and complete double ligature of the sinus has been shown to be largely devoid of serious results, and calls for adoption when other less severe methods have failed or proved incompetent to meet the indications required.

Besides other important facts shown by Schellmann, he has indicated also, by both experiment and collated cases, that contraction in the calibre or even complete obliteration of the lumen of the large dorsal sinuses need occasion no constant disturbance in the brain, but, on the contrary, that such obstructions may and do exist for an indefinite time without the manifestation of any grave cerebral symptoms. Additional evidence of the immunity with which these venous channels may be reduced or lessened in their calibre, is seen in the case of Parkes (*l. c.*), where the sinus longitudinalis was diminished at least one-third by lateral suture, and also that of Kuester (*Berliner Klin. Wochenschrift*, Nov. 14, p. 673, 1881), who, in the extirpation of a sarcomatous growth from the dura mater of the frontal region, successfully practised prophylactic double ligation of the exposed longitudinal sinus.

This subject of deligation of the sinus has been particularly studied by Senn, and, as a result thereof, he considers it a safe measure for the arrest of hæmorrhage, and believes that preliminary ligation will become an accepted procedure in the removal of dural and other tumors involving this structure. Certainly the subject is an important and interesting one, and with me fully maintains the feasibility of ligation of the sinus in specially severe cases of ectasia or hernial protrusion of the sinus-wall, and also of the diffused variety, demanding surgical action.

The aseptic tampon (Senn), cold (Abel), position, and styptic substances as means of arresting bleeding from this locality need not be discussed.

Air-embolus or aspiration of air into the sinuses is a danger which, although having but one known recorded instance of a fatal occurrence to demonstrate its possibility, namely, Volkmann's case (reported by Geuzmer (*Verhandlungen der Deutschen Gesellschaft für Chirurgie*, vol. vi, p. 32), must be recognized and borne in mind in all operations implicating these venous reservoirs; and, indeed, the assertion of Franck (*Sur la transmission de l'aspiration thoracique jusqu'aux canaux Veineaux des os du Crâne, etc.; Gazette Méd.*, No. 25, 1881) that he has witnessed more than once after trephining the entrance of air into the diploic veins, should admonish us that the so-called danger zone is not limited to the cervical region, and to exercise due precaution in dealing with all operations and injuries implicating the cranial tissue.

It is unnecessary to examine any farther this danger of air-aspiration in these localities, and for more accurate information of the subject generally I cannot do better than direct you to the literature of the entrance of air into veins, and in particular the valuable and elaborate paper of Senn, which has been already several times referred to and quoted from.

The occurrence of serious brain perturbations and disturbances attending operative measures upon the sinuses, rests almost entirely in an interference with the delicate equipoise of the cerebral circulation. This question has been clearly answered in the negative by the observations of Schellmann, and the cases I have referred to, to which may be now added the patient of Schüppel (*Ziemssen's Handbuch, Galle and Pfortader*, p. 324, mentioned by Browning, *l. c.*) in whom the superior longitudinal and both transverse sinuses were found obliterated by an organized thrombus, and with compensatory anastomosis.

In conclusion, after this brief sketch of the treatment of this class of sanguineous formations, I must express myself as favorably inclined towards curative operative measures—especially by the suture and ligature, electro-puncture, and strangulation of the base—in certain extreme instances, the particular method chosen to be governed by the type and form of the individual case involved.

RECAPITULATION.

As a result of the foregoing study the following summarized conclusions are reached:

1. Cranial venous blood tumors communicating with the dural circulation are to be classified into three divisions, namely: the congenital, spontaneous, and traumatic.

2. These classes are divided, upon both anatomical and pathological grounds, into two species or varieties: *a*, the diffused, produced by a perforation of the cranial plates and the wall of the subjacent sinus, resulting in a limited extravasation of blood beneath the scalp and thus forming a blood-cyst in direct or immediate communication with the affected sinus; and *b*, the venous or vascular, in which the tumor is directly formed at the expense of the venous coats, and includes in its scope the sinuses, the venæ emissaria, and the diploic vessels.

3. The venous type is the commonest in point of occurrence, and of this type, varicose involvement of an emissary vein is the most frequent form; whilst the diffused is the rarest of all the varieties.

4. The diffused variety is especially characteristic of the spontaneous and traumatic groups. The venous or vascular type occurs most frequently in the congenital class, but at the same time is often met with in the spontaneous division.

5. The medium of communication with the intracranial circulation is, in the very large majority of instances, represented by the superior longitudinal sinus, particularly its central and posterior portions. The emissaria Santorini most often implicated are, probably, the superior or posterior parietal emissories, which pair, also, are the most constant and uniform in their existence. When the diploë is involved the frontal region is the usual seat—no instance of a similar occipital formation having been observed.

6. In a causal relation, some morbid action in the venous walls is notably prominent in the congenital class; in the spontaneous group, atrophic or rarefying

osteitis ranks first as a cause, and venous disease secondly; and in the traumatic division, direct injury, which nearly always means fracture, is the only etiological factor.

7. Palliative measures for retarding or arresting the progress of the growth, and certain forms of compression intended to act as a curative agent, are useless applications—the latter, in addition, being capable of producing alarming head symptoms, and hence may be harmful.

8. General surgical interference is not called for, because the history, nature, and progress of the lesion is opposed to indiscriminate operation; being of that character to render such treatment unnecessary. When, however, operation is deemed expedient or is demanded, the following methods seem to be open for adoption:

First, if the growth be either of the diffused type, or that form consisting of a varix-sinus, exposure and ligation of the pedicle (if such exist), or, if necessary, deligation of the sinus in its course, the trephine being boldly employed to furnish requisite space for the necessary attending manipulation. The lateral ligature and suture, when applicable, are preferred to complete ligation.

Second, if the tumor be composed of varicose emissary vessels, or, perhaps, of diploic dilatations, either electro-puncture or strangulation of the base are justifiable procedures, but preference is given to electro-puncture.

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MEDICAL PROGRESS.

CAFFEINE AS A DIURETIC.—Our knowledge of the physiological action of caffeine is insufficient to fully explain the powerful diuretic result that so frequently attends its therapeutic use. The modification of the pulse-rate and the increased blood tension that ensue upon its use owing to excitation of the vaso-motor centre, do not explain the phenomenon. For this reason, W. VON SCHROEDER, of Strassburg, followed the question up experimentally. He has arrived at the conclusion that caffeine exercises a powerful and energetic influence upon the renal secretion through a direct stimulation of the specific secretory elements.

Caffeine may so influence the vaso-motor centre that urine-secretion becomes diminished. In order to eliminate any influence on the part of the vaso-motor centre upon the secretory apparatus, Schroeder produces paralysis of the named centre in animals by means of chloral hydrate.

Thus a marked reduction of blood-tension results. A rabbit of 4½ pounds was profoundly chloralized, and canulæ were inserted into the ureters. Thereupon, within a space of seventy minutes time, one-half gram, seven and one-half grains, of caffeine were injected in three portions into the jugular vein. The amount of urine excreted during the seventy minutes was about eleven times the ordinary normal amount. In the absence of any specific secretory nerves of the kidneys, and from the circumstance that the circulation after chloralization takes place in strongly collapsed vessels, the reporter arrives at the opinion that caffeine must exert a direct influence upon the renal epithelia.

In order to demonstrate this conclusion more clearly, the experimenter proceeded by tearing all the nerve-filaments entering the one kidney of an animal, and left the nerve supply of the other gland intact. Thus all vaso motor influence upon the one kidney is eliminated. In order to preserve this influence in full force as regards the intact kidney, the animal was placed, before experimentation, under the hydrochlorate of morphine. In a rabbit, the above described experiment showed an enormous increase of secretion from the kidney whose nerves had been severed, over the amount eliminated during the same time from the intact kidney, after caffeine had been introduced into the circulation. Therefore, it follows that caffeine stimulates diuresis by direct action upon the specific secretory epithelia.

The strong diuretic action of caffeine has, until recently, escaped general attention on account of the double influence exerted by the alkaloid, *i. e.*, the excitory influence upon the central nervous system, similar to that of strychnia, and the stimulating influence upon the secretory elements of the kidney. The latter physiological action may be inhibited and even completely masked by the former. The method of pharmacological analysis adopted by Schroeder, threw out the vaso-motor element of action and brought the special influence upon the renal gland apparatus into prominence.

Schroeder compares this dual quality of caffeine to that of pilocarpine. Small quantities of these alkaloids are sufficient to promote specific secretion. This peculiar action of caffeine demonstrates, according to Schroeder, the glandular nature of the kidney in a more pointed manner than any hitherto adduced argument, and shows that the kidney is not a simple filter.—*Weekly Med. Review*, July 24, 1886.

CONTROLLING BLEEDING DURING EXCISION OF THE TONGUE.—MR. JORDAN LLOYD describes a method controlling bleeding from the tongue during partial or complete excision. The patient is placed under ether, a gag adjusted, the left index finger is carried well to the bottom of the glosso-epiglottidean pouch, defining clearly the hyoid bone with its cornua, the front of the epiglottis, and the back of the root of the tongue. A stout, long, well-curved, mounted needle, threaded with medium sized whipcord, is entered from the front of the neck, in the middle line, immediately above the hyoid bone; one feels for the point of the needle with the left finger, as the instrument is pushed through the root of the tongue. In this way, the epiglottis is protected from injury, and nothing more than the lingual tissues are transfixed; then hook up the loop of thread with the left finger, and pull it well through and out of the mouth. Withdraw the needle, liberate the thread from it, and cut through the loop. Now enter the empty needle at the same point of puncture, through the skin only, and pass it subcutaneously to the right, until its point is opposite the upper border of the root of the great cornu. Care must be taken to keep just under the skin, and so avoid the lingual artery. Now turn the point inwards above the great cornu, so as to enter the bottom of the side of the pouch, and feel for the point of the needle with the finger. Thread one of the ends of the cord, which is in the mouth, through the needle, and withdraw. This casts a loop around the right half of the tongue. The left half may be dealt with in a similar manner.—*London Medical Record*, May 15, 1886. *Boston Medical and Surgical Journal*, August 26, 1886.

THE
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THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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SATURDAY, OCTOBER 2, 1886.

TOXIC URINE AND SURGICAL OPERATIONS.

In a recent article, in the *Liverpool Medico-Chirurgical Journal*, of July, 1886, "On Toxic Urine in Relation to certain Surgical Operations on the Urinary Organs," MR. REGINALD HARRISON says that it is impossible to study a series of cases of internal urethrotomy without recognizing that, apart from their surgical interest, they may be regarded as extremely valuable physiological experiments in relation to some unworked-out problems connected with animal chemistry. All surgeons have noticed the frequency with which urethrotomy by the method of introducing a concealed knife within the urethra is followed, within three or four hours, by a rigor, and a subsequent development of more or less pyrexia; that these attacks may be repeated at varying intervals; and that they differ widely in degree, some being very mild, while others are fatal within a few hours. We cannot explain these attacks by referring them to something like reflex action upon a pathological kidney, for the post-mortem examinations have shown that they may occur in patients with perfectly sound kidneys. Nor can the attacks be explained by a supposed traumatic action: "If a man's brain or cord is damaged by a blow or a shock, he shows signs of concussion or nerve traumatism immediately upon the receipt of the injury, and not three or four hours afterwards."

Again, if it be a nerve lesion of the urethra which is the cause of the attack we should see urethral fever occur after the far more extensive nerve injuries produced by lithotomy and other severe operations on the urinary tract. "The improbability of urethral fever after internal urethrotomy, catheterism, and such like, being due directly to nerve shock, is indicated by other collateral considerations which may be noticed. In the first place, we should expect such symptoms to follow Holt's operation for stricture just as frequently and severely as after section of the stricture from within. On the contrary, rigors and fever are far less commonly met with after dilatation with rupture than after internal urethrotomy—tearing or stretching is considerably less productive of urinary pyrexia than incision. In the next place the position of the wound in internal urethrotomy, relatively to the circumference of any given part of the urethra, should hardly be expected to exercise a sort of determining influence in the production of rigors and fevers, if the causation of these effects was a nerve lesion. Yet we find such symptoms more frequently follow when the section is made on the floor of the urethra in preference to the roof. A dependent position of the urethral wound is more likely to be associated with fever than one not so situated. Lastly, we should hardly expect the manifestation of these symptoms to be influenced by mechanical after-treatment if damage done to the local nerves was the cause of the symptoms that followed." But when we analyze a number of cases in which a catheter is worn for a time immediately after internal urethrotomy, and bladder drainage carried out in a thorough manner, we find that a very considerable proportion of these cases escape attacks of urethral fever.

If these effects, asks Mr. Harrison, are the result of nerve lesions, how is it we do not see them following lithotomy and properly performed perineal section for urethral stricture? In regard to perineal section, "the earlier experience of Syme only shows how easy it is to construct a perineal section which proves to be just as ready a cause for rigors and fevers as any internal urethrotomy. In looking over the notes of my earlier cases of internal urethrotomy, it struck me, as being worthy of remark, that neither rigors nor fever showed themselves until after micturition had been naturally practised, or there was evidence that urine had found its way into the wounded urethra and was lodging there." This again is opposed to the idea that nerve lesion is concerned in the production of the attacks, since the symptoms did not appear until urine had come in contact with the wound. These considerations led Mr. Harrison to think that the rigors and fever were symptomatic of poisoning rather than shock; and he determined to test the matter in practice. He resolved to perform a series of operations in suitable cases, in which, though internal urethrotomy was done, no urine would be allowed to remain in contact with the freshly

made wound. This involved an external perineal urethrotomy being done immediately after the stricture had been divided from within. After doing this a number of times he saw that it was possible to produce rigors and fever at will. "So long as the bladder drainage through the external perineal wound was free and uninterrupted, there was invariably a complete absence of rigors and fevers."

It is now proper to ask as to the different conditions under which the surgeon has to deal with wounds which are exposed to the action or influence of urine. "Running healthy urine may be regarded as absolutely innocuous. When it can make its way over a fresh cut surface, or out of a cavity, just as fast and uninterruptedly as it flows over or in, it need cause no apprehension; on the other hand, when it is pent up, as in a wound or space, it is apt to be speedily converted into a most destructive, and, I believe, poisonous agent." The conditions, for the production of urine fever, attending the operation for internal urethrotomy are very favorable. The incision which divides the contraction necessarily paralyses the urethra to a greater or less extent; and hence the process of repair must go on with the wound soaked in urine left behind to stagnate and decompose after each act of micturition—and this is a different matter from the incontinent flow of urine over the glazed and granulating open wound of a lithotomy or a perineal section. "In one case it is merely contact of urine with open spaces, in the other retention, and probably chemical rearrangement, within a space bounded by a freshly made wound. My direction and kind of work led me to believe some time ago that the urine could provide septic material of a kind which seemed to me to have been previously unappreciated in connection with the causation of urinary fever."

Valuable, as bearing on this question, are the experiments and work of Bouchard in regard to the toxicity of urine. Four years ago he showed that alkaloidal substances are constantly present in the urine in some infective disorders; and he showed that these alkaloids are of an intestinal nature—that is to say, they are produced in the intestinal canal by the growth of the vegetable organisms contained therein—and that they are analogous to ptomaines. These alkaloids were subsequently found in normal urine. Bouchard drew, among others, the conclusion that the alkaloids of normal urine represent a fractional part of the intestinal alkaloids, absorbed by the intestinal mucous membrane, and excreted by the kidneys. Two years after his first paper, he determined (in 1884) the effects of normal urine on rabbits, and found that the same doses produced different effects according as the animal furnishing the urine was or was not in health; that the toxicity varied in different individuals; that the symptoms depended on several different substances; that the alkaloids soluble in alcohol differ in their effects from those insoluble in alcohol; that although five or six substances may be present, they may be arranged in two groups, a *convulsive* and *narcotic*; and he concluded that the symptoms in different cases of uræmia may be explained by these groups being present in varying proportions. The symptoms of urinary toxæmia from the introduction of urine into the veins of rabbits are, in the order of their occurrence: 1. Contraction of the pupil. 2. Acceleration and diminished amplitude of the respiratory movements. 3. Increase of urine. 4. Fall of temperature. 5. Diminution and finally abolition of reflexes. 6. Convulsions usually with coma, and 7. Death; the action of the heart and the electro-contractility of the muscles persisting for a time after death. The fall in the temperature is due not to increase in the loss of heat but to a diminution in heat production. Bouchard calculates that a man excretes enough poisonous matter by the urine to kill himself. "During eight hours, if asleep, only from one-quarter to one-half as much poison is excreted as during the same period when awake. If the whole day be divided into three periods of eight hours each, the proportional quantities of poison excreted are—sleep, 3; early waking period, 7; late waking period, 5. The urine of the sleeping and waking hours also differs qualitatively as well as quantitatively. The alkaloid of the urine of sleep is *convulsive*, that of the waking urine *narcotic*. The urinary poisons of the sleeping and waking hours are not only different, they are physiologically antagonistic. Fasting increases the toxicity of the urine, probably because then the individual lives on his own tissues, and these are relatively more difficult of oxidation than the ordinary food, and are less completely oxidised. Labor greatly diminishes the toxicity of the urine, as does also the breathing of compressed air." Why are these symptoms not produced when urine, after ammoniacal, is subcutaneously forced among the tissues, sometimes in large quantities, as in cases of stricture and sudden urinary extravasation? "The conditions attending subcutaneous urine extravasation are essentially different from those associated with the continuing contact of urine with a wound in the urethra, as in internal urethrotomy. A mixture of blood and urine seems to be capable of producing very different compounds from those that extravasated urine

alone is likely to yield. Nor are we entirely to lay aside the consideration, that whatever *materies morbi* may be found at the seat of the wound by the conjoined decomposition of stagnant blood and urine, its entrance into the circulation must be favored by the contractile power of the bladder from behind. Again, when urine is extravasated amongst the tissues, its action is that of a virulent local poison, under the influence of which the contiguous tissues are killed outright, probably before they can exercise any power of absorption. Such a conclusion seems likely from some of Mensel's experiments, where putrid and normal urines were subcutaneously injected into various parts of the body." But why is it that the same symptoms have been produced in sufficient intensity to cause death within a few hours, when there is no evidence to show that the urethral walls have been lacerated by the catheter or bougie? There may be no external evidence of laceration, but it is extremely likely that some lesion has been produced. Mr. Harrison has frequently drawn attention to this point, and has shown how readily false conclusions in reference to it may be drawn.

THE ORGANIZATION AND PRACTICAL WORKING OF THE SECTIONS OF THE AMERICAN MEDICAL ASSOCIATION.

In giving a brief account of the recent meeting of the British Medical Association at Brighton, in THE JOURNAL of September 25, we stated that there were some things in the practical working of the Sections that might be profitably imitated, or even improved upon, in the Sections of the American Association.

Among these were, more care in the early and complete preparation of papers and their announcement in the columns of the *British Medical Journal* a considerable time prior to the annual meeting, thereby making it possible for the officers of each Section to arrange for a more profitable discussion of all the more important topics to be presented. To accomplish these results requires no change in the by-laws or organization of the Sections of our Association, but simply a better appreciation of the duties devolving both upon the officers of the Sections and those who prepare papers. It has been too much the custom for the officers of each Section to rely entirely upon the voluntary or unsolicited contributions of members, and to give no notice of such contributions as are offered until they are announced in the programme prepared by the Committee of Arrangements and furnished to members at the registration table. Instead of this it should be regarded as one of the most important duties of the President and Secretary of each Section, as early as possible after their appointment, to select at least three topics (one for each day's session) of importance and practical interest belonging to the Section, and to secure specially qualified members to present these subjects at the next meeting, and one or more equally qualified members to lead in the discussion of such topics. This would in no wise interfere with the acceptance of voluntary papers from any other parties who might offer them in due time, but it would be quite certain to secure something of special interest for each session of the Sections. And if the principal topics thus selected should be announced in the Journal of the Association one, two, or even three months before the time of the annual meeting, it would attract the attention of many, excite more investigation, and result in a much more constant attendance in the sessions of each Section. We respectfully invite the attention of the officers of the several Sections to this subject, with a view of promoting the interest and importance of the meeting of the Association in Chicago next Spring.

"DEADLY SANITARY PLUMBING."

Under this somewhat paradoxical head the *Chicago Tribune*, of September 12, steps from the world of science and fact and revels in the unlimited fields of ignorance and imagination. Without stopping to show how plumbing or anything else that is deadly can be *sanitary*, the writer of that editorial stumbles through a mass of misleading, weak and easily disproved assertions, to finally reach the conclusion (the only statement in the whole editorial which cannot be easily disproved) that "in those portions of Chicago where there is the least plumbing there is the least sickness arising from its effects;"—which is equivalent to saying that in those countries in which there are no railways there is no danger of being killed by a locomotive. But why limit the statement to Chicago? It is equally true of Hong-Kong.

"As at present constructed," says this remarkable editorial writer, "plumbing is simply an easy arrangement for the conveyance of the gas from bath-rooms, and water-closets, and sleeping-rooms, not to speak of the basins themselves, which assist in the deadly work (of carrying *off* the gas?). Where there is no plumbing to connect them (the water-closets and basins?) with the street sewerage there is no trouble from the gas." The greatest and most important discoveries are sometimes stumbled upon by accident, and sanitarians and plumbers have worked and waited for many years, only to have the real use of plumbing discovered by a "deadly sanitary" writer.

There has long been a popular superstition that plumbing was for the purpose of conveying waste water, slops and sewage from bath-rooms, water-closets and sleeping-rooms to the street sewers; but the *Tribune* has exploded this fallacious idea. The *Tribune* seems to think that "the gas" is generated in the wash-basins and bed-rooms, and yet complains of the plumbing for being "an easy arrangement" for conveying it away; the wash-basins themselves being accessories in the "deadly work of conveying the gas away." Here again is another new scientific fact: "Where there is no plumbing to connect them (bath-rooms, water-closets, sleeping-rooms and wash-basins) with the street sewerage there is no trouble from the gas." The fact is, it is just under this circumstance, or when the plumbing is defective, that there is trouble from the gas. If the plumbing and drainage of the *Tribune* office be in accordance with the unsanitary ideas of the editor it should be inspected by the Health Department.

SOCIETY PROCEEDINGS.

CHICAGO MEDICAL SOCIETY.

Stated Meeting, Sept. 6, 1886.

E. J. DOERING, M.D., PRESIDENT, IN THE CHAIR.

DR. J. S. JEWELL gave a partial verbal abstract of his paper on

OVERFILLING AND DILATATION OF THE COLON.

He said that for the last ten years this subject had attracted more or less of his attention. During the last eight or ten years he had accumulated a list of over five hundred carefully studied cases, in which the condition named existed and concerning which he gave his observations. His mode of investigating the cases in which the overfilling existed has been as follows: The patient is stripped so that the abdomen is bare, the abdominal walls being relaxed. Then he takes a plate of soft rubber at least two inches in length by an inch and a half in breadth and one quarter inch in thickness, and a heavy steel hammer, quite as heavy as the ordinary surgical bone hammer. With this the abdomen is carefully percussed over the track of the colon, from its origin tracing it up under the liver, across and down to the sigmoid flexure. Thus percussing over the track of the colon and carefully locating every mass of fæces, (even in persons with fleshy abdominal walls) he has been able to get at its course and contents. Out of these five hundred cases, perhaps a hundred have said that they were as "regular as clockwork" in having movements from the bowels. But upon examination, in most such cases the colon was found to have variable quantities of fæcal material lying in it. The part of the colon most subject to dilatation is the sigmoid flexure and the descending colon. At the flexure of the colon, deep in the left hypochondriac region, almost as frequent as in any other part of the course of the colon, he had found it dilated and filled with fæcal matter. The next most common situation is the transverse colon, last of all the cæcum. In one case where the colon was very largely dilated, during the thirty or forty hours that were devoted to emptying the same (not continuously but at different times) two gallons or more of material were removed. The common way is to find masses of fæces lying in lumps here and there, not filling the entire intestine.

In one case a mass was removed from the right extremity of the colon by massage, and flooding the colon its entire length with water. The fact that this mass had remained in the colon for more than nine months was ascertained in this way: The patient had taken a dish of dewberries such as appear in the fall after the ordinary blackberry has passed its season. He was in ill health, and growing worse during his visit returned home. This was in September. Dr. Jewell saw him early in June following. When the mass was removed it was found to be more or less filled with the seeds of the dewberry, and according to his own account he had not taken berries of any kind since the September previous, certainly no dewberries. This mass was about the consistence of soft putty and the size of a large Irish potato.

In most cases investigated the colon was dilated apparently, in some part or other, all the way from two to three times its proper caliber. This class of patients are all liable to become "bilious" and are habitually taking cathartic pills, mineral waters, etc. In every or nearly all instances, Dr. Jewell could trace their "biliousness" to gradual filling up of the colon, and the disturbance produced from this cause in the digestive apparatus higher up. The change in the secretions of the mouth, the bad breath, the unhealthy odor of the skin produced by absorption of fœtid substances from the rotting masses in the intestine together with the coloring matter in the same, gives the skin of the patient a peculiar dirty sallow color. One of the first things to occur in addition to the dilatation, and weakening of the muscular coat of the colon by accumulation of material in it, is irritation of portions of the mucous membranes were the fœcal masses lie, producing local catarrhs. This occurs with a frequency and to an extent that no one would suspect, unless they set the patient or nurse to carefully watching the stool. The next important factor in these cases is irritation of the peripheral ends of the sensory nerves of the intestinal mucous membrane, irritated by contact with the fœcal masses. The nerves that return from the colon probably enter the spinal cord, at a level not lower than that of the tenth or eleventh dorsal vertebræ. Above the level named they probably enter the cord at various points higher up in the lower two-thirds of the dorsal cord, not to mention direct medulla connections, etc. Along these nerves are propagated the irritative impressions from the colon into the spinal cord or medulla, and thereby "switch" connections outgoing or reflex impulses are sent to other portions of the body,

producing thus various forms of disorder to be referred to later. He believes that he has not found one case out of twenty of ordinary melancholia that has not had its origin partly or in some cases apparently entirely in overfilling of the colon. Headache and a great many transient disorders referred to the head more frequently owe their origin to this source than he had ever supposed. Next is the influence upon the circulation in general, especially upon the heart's action, lowering its tension, and thus giving a feeble pulse.

Dilatation of the colon often causes a sluggish capillary circulation, and this accounts for the frequency with which patients complain of cold extremities. Dr. Jewell has found patients who could not remember having had naturally warm feet for years, when upon removal of the masses in the colon the feet would become warm. In insomnia he has found the condition of the colon described to be a frequent cause, the colon being the seat of the original disorder. There is lowering of the vascular tension nearly always in these cases, hence the feeble nutrition and feeble circulation in the brain, not to mention other parts. The next most important result of dilatation and overfilling of the colon is the fact that these masses of retained fæcal substance in various ways poison the individual, by absorption of septic material. He has had three cases of epilepsy that he traced exclusively, as far as could be told by the results of treatment afterwards, to disease in the left extremity of the colon caused by fæcal accumulations, and when the disorder was removed by proper means he was able to relieve the epilepsy. For the removal of these masses, as a rule, he does not use purgatives, but injections are given after the following plan: A large bag fountain syringe, holding half a gallon is adjusted at a convenient height from the floor, the patient lying down in the knee-chest position. The fluid should flow with considerable force until it makes its way past the upper sphincter which is at the lower part of the sigmoid flexure; pass one quart to one-half gallon of water, according to the size of the colon, so as to fill the entire organ to the cæcum. In some instances he has been able to introduce as much as a gallon of water into the colon, the patient feeling no serious inconvenience from it, and a half gallon is a common amount to introduce. The patient is then directed to lie down on the left side, and by proper massage over the ascending colon the liquid is moved and with it the contents of the bowel, toward the rectum. This should be done once or twice in the twenty-four hours until the colon is clear, and by this means it should be kept so. After this has been accomplished give the patient something that will act as a stimulant to the nervo-muscular coat of the colon. A good prescription for this purpose he has found should contain in pill or capsule form extract of cascara, a little belladonna, strychnia, hydrastis canadensis and aloes. By care the colon can be kept clear, and the disorders of the stomach usually disappear, the secretions of the mouth are improved, the skin becomes of a healthier color and loses the distinctly fæcal odor that it frequently has.

He has met with a number of cases of so-called typho-malarial fever in their earlier stage with a temperature as high at times as 103–4–5, in which, by removing a great mass of material undergoing rapid fermentative decomposition at the high heat of the body, leading to rapid distension of the colon with gas, the signs of disease abated in a few hours and rapid recovery occurred. Where there is considerable inflammation in the bowel itself he introduces water pretty well charged with listerine or some other antiseptic, and a little glycerine or other medicinal agents, and in this way the intestine is purified and cleansed and the individual immediately improved. It seems now astonishing that it never occurred to him earlier, that to have a mass of fæces undergoing fermentation and decomposition in the interior of the body, and in contact with an absorbent surface like the colon mucous membrane is or may be often the real cause of serious diseases.

Dr. H. A. Johnson in opening the discussion said: This is a subject to which I have given no special attention, but perhaps if I propose one or two questions it may elicit some information. First, the inquiry suggests itself to me as to why this state of things exists, what is the cause of it? Perhaps as the author has suggested our rapid mode of eating, and our neglect of the natural demands of the functions of digestion have something to do with it, but this does not seem to me to cover it all. Secondly, the question arises in my mind as to how far such a state of things as he describes does actually exist in the colon, viz., putrefaction of the contents. So far as my observation goes the contents of the cavities of the body, including the alimentary canal and bladder, are kept from undergoing these putrefactive changes while they are inclosed. It is true that the fæcal matters are full of bacteria in various forms, but I am not sure that the ordinary processes that take place out of the body, go on here. Thirdly, as to the function of the colon; it is both an excretory and secretory organ, and nutritive matter that are carried into it are undoubtedly taken up in their passage through it. There should be a delay, a normal arrestation of the progress of the fæcal mass from the time it enters the colon at the cæcum till its discharge. In the normal condition the fæcal mass is made up of the debris, of the waste matters of food, and the material removed from the blood; there ought to be, physiologically a retardation—time for the accomplishment of these two functions. What is that time?

Dr. Wm. E. Clark said: The subject before us is one of great importance, and one to which I have given much thought. My first call in consultation, after my return to the city some twenty years ago, was to a female patient who had been an invalid for a number of years. A tumor could be felt through the abdominal walls, supposed by the attending physician to be a tubercular enlargement of the mesenteric glands, but which proved to be a mass of fæcal matter in the colon. It had probably been accumulating for a long time, as after removal it was found largely to consist of bran from Graham bread—her principal diet for several years previous. Under ap-

propriate treatment, with particular attention to the condition of her bowels, the patient apparently recovered her health, though she died some years after with disease of the kidneys—the latter perhaps having some relation to the previous condition of the bowels.

Again, to day I made an examination of a supposed uterine tumor, and found a tumor but not connected with the uterus—but an accumulation of fæcal matter in the colon, and consequently have made arrangements for its evacuation. For the removal of these masses of fæcal matter, I first gave cathartic with large doses of olive oil and then use injections of water into the bowel as far up as possible through a stomach tube; sometimes resorting to the placental forceps for the removal of large fragments.

DR. G. C. PAOLI said: I have listened with a great deal of interest to my learned friend to-night. We know that expansion of the colon occurs in many different diseases and there is hardly a practitioner who has not seen it in his practice for years. We see it in typhoid fever, nephritis, hysteria and lead colic. Constipation is undoubtedly a great cause of expansion of the colon. A man gets constipated, neglects himself, his fæces become very hard and in consequence pains occur in the colon. With due respect to the author's experience and observation, he must admit that although we meet with cases in our practice they are not so common that we see them in the hospital. In regard to the treatment, we ought to administer such remedies as will give tonicity to the muscular coat of the bowels, such as cascara sagrada in combination with small doses of aloes. But without physical exercise medicine has very little beneficial effect. I have seen a shower bath over the abdomen have a good effect in producing contraction and tonicity of the muscular coat of the bowels. In regard to the injection which the author advises, it is well to remark that the rectum should first have a digital examination, because often hard excrement is impacted in it and under such circumstances the injection would meet with an obstacle. Strychnia may be very good in chronic but not in acute cases.

DR. JEWELL, in closing the discussion, said: The members of the society will of course understand that I have spoken only of the sick people who have come to me, a special class that is not met with so frequently in general practice. I am speaking entirely within bounds when I say that the number of cases that I now have on my record in which overfilling of the colon was one of the principal features of disorder, must be 700 or 800 during the last ten years, and 500 of these have been made the basis of my study. The question as to how long the matter may be left in the large intestine without harm is to me exceedingly interesting, and I have made that a study. The difference between the ordinary slow decomposition of fæcal matter in the intestine and unhealthy decomposition, I have taken into account in my study, as well as the conditions or causes that bring about unhealthy decomposition. I am convinced that not enough stress is laid upon this subject. Many persons in the condition I have referred to have been all but ruined by taking by the week, month and year, cathartics, which must be taken into the stomach first, dissolved and go the entire length of the small intestine before they reach the colon. The colon may be emptied in a much more satisfactory way by means of large injections, together with the use of medicinal agents, to stimulate naturally its weakened muscular apparatus.

DR. A. SCHIRMER reported a case of

ACTINOMYCOSIS HOMINIS,

with exhibition of patient and specimens of actinomycosis.

Frank P., a Pole, 25 years old, married, laborer in a lumberyard, has been five years in this country. No hereditary disease in his family. His occupation in the old country was farming during the summer months and during the winter months he attended to barnwork. He never was sick and never had the toothache. In his 18th year, while chopping wood he received an injury on the chin, which produced a bleeding wound. No medical attendance was necessary at the time. Shortly afterwards he noticed a swelling on both sides of the lower jaw. The swelling of the right side disappeared in a few days, but that of the left side remained three months after the injury. He was obliged, on account of pains, to consult a physician who injected at different times a clear fluid into the swelling. These injections were very painful. Shortly after the injections the skin turned white, and in the course of a few days it broke open and discharged a little pus. Later on the discharge of pus increased, the fistula remaining open. After that time the patient was not able to fully open his mouth. Three years ago, on account of a severe cough, he was unable to work for one week. From that time on he was able to work until last May, when on account of weakness, pains and stiffness in the neck, he was obliged again to quit working. At the end of July Dr. Schirmer saw him at his house. He complained of severe pains in the left side, and stiffness of the neck, being unable to move his head. He was feverish, pulse and temperature increased. He also had some cough; no appetite. Two days afterwards the opening of the fistula was enlarged and several small pieces of necrosed bones extracted. At the same time Dr. Schirmer opened an abscess situated between the jaw and the shoulder on the left side which discharged about one tablespoonful of a thin, serumlike pus, in which were sandlike granules of a greyish-yellow color. The opening was enlarged, and by digital examination and with the sound it was found that the crown of the abscess had no connection with the surrounding tissues. The abscess was superficial and did not extend into the deep layers. After this operation the patient could open his mouth better; ten days afterwards another abscess was opened on the right side of the neck. It discharged almost four tablespoonfuls of pus. The pus was thicker and the granules were considerably smaller than in the abscess of the left side. The skin was hard.

His cough and expectoration have become gradually worse. His appetite and sleep have also failed. For the last ten days he complained of severe pains in the right arm. A microscopic exami-

nation of the pus confirmed Dr. Schirmer's suspicions regarding the character of the disease, who found in the contents of the abscess actinomycoses. He also found actinomycoses in the sputum. Prof. Fenger, to whom he had given some of the contents of the abscess, also found actinomycoses.

DR. NEWKIRK asked if the patient knew of any disease among the cattle he attended.

DR. SCHIRMER: He said there was no disease among the cattle, and nobody else had such a disease.

DR. W. T. BELFIELD said: The case is hardly one for discussion, because Dr. Schirmer has not said anything about actinomycoses as such, but merely about the case. The finding of actinomycoses in the sputum is very interesting, it is undoubtedly a case of actinomycoses of the lungs and must prove fatal. There are only some thirty cases recorded in which this parasite has been found in men. I am not familiar with the literature on the subject for the last year, but up to that time there had been no well authenticated case of actinomycosis observed in man either in England or America.

DR. A. V. PARK read a paper on a case of

CARIES OF THE RIGHT PARIETAL BONE CAUSED BY RAILWAY INJURY.

The patient was a stout German boy, aged 16, who was injured September 18, 1883, sustaining various lacerations and contusions on the body, besides a V-shaped wound over the left ear and a circular wound nearly over the centre of the right parietal bone. No fracture of cranium was discovered, although at the request of Dr. Park the case was examined by the family physician and the railway surgeon on different occasions. Patient exhibited signs of collapse and rallied slowly. Erysipelas ensued. After fourteen days the boy commenced to regain consciousness, but could not distinguish one person from another, nor remember events which occurred only a few hours before. It was over a week before he had complete control of his senses. Seventy days after the accident a piece of exfoliated bone, size of three cent piece and thickness of external layer of cranium, was removed from wound over right parietal bone. More dead bone was detected, and ninety-two days after the injury an area of two and one-half inches in width by three and one-half in length of diseased bone was removed, the bone being removed down to the diploë. Erysipelas again ensued and lasted about one week. One hundred and fifty-one days after the injury the patient was discharged, with partial deafness of the left ear and impaired vision of the left eye, as the only unfavorable results of the injury. Dr. Park gave as the result of his observations of railway injuries the following conclusions: 1. Sloughing is the rule in contusions and lacerations. 2. Hæmorrhage may be little, but is apt to be great in injuries to head, or extremities where large vessels are lacerated. 3. Examination of wounds should be thorough, and is best done during period of shock. 4. Shock may be excessive and death ensue rapidly, or reaction take place slowly with symptoms of collapse. 5. Amputations are attended with high rate of mortality, owing to liability of stump being attacked by erysipelas, osteomyelitis, sloughing, or pyæmia ensuing. 6. Erysipelas may ensue rapidly and must be manfully combatted. 7. A large majority of persons injured on railways recover but partially. The sequelæ may be paralysis, insanity, loss of memory, impaired vision, deafness, etc. These results may follow immediately, or not appear until months or years after the injuries were inflicted.

CHICAGO GYNÆCOLOGICAL SOCIETY.

Regular Meeting, Friday, August 20, 1886.

THE VICE-PRESIDENT, HENRY T. BYFORD, M.D., IN THE CHAIR.

W. W. JAGGARD, M.D., EDITOR.

DR. W. W. JAGGARD exhibited

AN OVUM CORRESPONDING TO THE FOURTEENTH WEEK OF PREGNANCY, SHOWING TWIN PREGNANCY, WITH ONE PLACENTA, ONE CHORION, ONE AMNION, BOTH EMBRYOS OF THE MALE SEX.

The interesting specimen was placed at his disposal through the courtesy of Dr. Daniel H. Williams, of Chicago. The egg corresponded to the fourteenth week of pregnancy. It was a case of twin pregnancy, with one placenta, one chorion and one amnion. The embryos were equally well developed and were of the male sex.

The case illustrated one of the modes of origin of multiple pregnancy. An ovum may have two nuclei, and an embryo may be produced from each nucleus. Under these conditions, the fecundated ovum has one placenta, (or there is anastomotic communication between two fused placentæ), one chorion and two amnions. The amniotic septum may be broken down or absorbed, and the embryos may be contained in a single amniotic sac, as in the specimen exhibited.

In a case of single placenta, or fused placentæ with anastomotic communication, and a single chorion, the twins are always of the same sex, (Hyrtl, Spaeth, Braun).

DR. JOHN BARTLETT read a paper, entitled

A PROPOSED MODIFICATION OF PORRO'S OPERATION.

After giving a concise history of the classical and Porro's operations, Dr. Bartlett said:

The substitute for Porro's operation which I have to propose is as follows: The operation proceeds as in Cæsarean section till the child is removed, the actual cautery being used in opening into the womb. Then, instead of dragging the womb out of the abdomen through the dominal incision, it is dragged out of that cavity through the vagina. The operator passes a Well's clamp, somewhat modified in its prehensile surfaces and properly curved in coincidence with the parturient canal, to the fundus of the uterus and there secures a firm grasp into the uterine tissues. By traction upon these forceps, and pressure, and suitable manipulation from above, the fundus of the uterus is depressed into the body of the organ, dragged through the cervix into the vagina to produce complete in

version. The clamping wire is immediately adjusted, and excision of the uterus and appendages effected at a suitable distance from the vaginal junction. The abdominal wound is closed, and attention is given to the stump in reference to hæmorrhage as in Porro's operation. In lieu of the clamping forceps, in some cases it would answer better, doubtless, to pass a loop of copper wire through the walls of the uterus to be caught upon a suitable instrument, as a rod possessing the flexibility of block tin or solder, passed *per vias naturales* to receive it. The advantages of this operation over Porro's method which suggest themselves are: *First*, that the abdominal cavity is thoroughly closed; the abdominal incision, not being embarrassed by the presence of the large pedicle is as perfectly and as quickly closed as in any other laparotomy. By the process of inversion the pedicle is placed outside of the abdominal cavity, while what may be termed the uterine inlet made into the peritoneal sac is closed by the clamping wire opposing serous surface to serous surface, thus offering the best prospect for speedy and certain agglutination and closure. *Second*, the relation of the parts in the suggested procedure are much more natural, and much less strained than in the *status* in which Porro's method leaves them. *Third*, in the event of drainage becoming necessary in the course of treatment, the effecting of an opening for a tube in the plan proposed can be accomplished very much more easily and safely than in Porro's plan and the tube being introduced, its situation and direction would be the best possible for thorough cleansing of the cavity to be washed.

Serious objections at first thought will occur to the mind of every gynæcologist. These will be here stated and subsequently met, as well as may be, by considerations that may be urged in answer to them.

First.—Of all the accidents *post partum* none is generally accredited with so violent a shock to the patient as the very condition which is here made a main feature in a method proposed as conservative. In the old, and in Porro's operation it almost always happens that, either with or without the partial or complete separation of the placenta, the uterus contracts. With such a condition of the uterine walls inversion would prove difficult and sometimes probably impracticable. Hunter said a contracted uterus was as difficult to invert as a jack-boot. When to these difficulties incident to the first step of the operation are added the shock from clamping and incising the uterus, it would seem that the dangers incident to the method proposed might exceed those of the Porro operation.

Second.—In Porro's operation, as in the old Cæsarean section, danger begins from hæmorrhage at the moment of incising the uterus, and in the method proposed this danger would be so much the greater as the time elapsing between the two events, incision and snaring of the pedicle, is longer. In the established operations in at least one-sixth of the cases the placenta has been encountered directly in the line of incision. In such instances the bleeding from the double wounds, uterine and placental, would, in an especial manner, embarrass the operator and endanger the patient.

Third.—It must be remembered that in the great majority of cases in which the operations under consideration are undertaken there exist contractions of the pelvis, which may seriously interfere with the main step of the operation, inversion of the uterus.

Fourth.—Apart from these more serious objections it may be urged against the plan by inversion that dilatation of the *os uteri*, a *sine qua non* of the method proposed, does not always exist at the time of operation, and that it may not always, or even often, be practicable safely to effect it.

These objections will now be considered seriatim. As to the first, regarding the shock to the system so often reported in association with inversions, it may be stated that associated with inversion also is very generally hæmorrhage, and to this all-powerful cause of depression may be ascribed much of the shock noticed in cases of inversion. While it must be admitted that in some instances inversion alone, entirely unassociated with bleeding, seems to have produced great shock, and even death, it may yet have happened that in some of these cases, other injuries, as laceration of the uterus, accompanying the inversion, may have been partly responsible for the profound impression observed, and one is the more justified in assuming that this objection may be over estimated, from the fact that in a number of cases carefully observed and reported, inversion has produced no shock whatever, and has in fact been accomplished without the knowledge of either the patient or obstetrician.

Blundell, Dailliez, Dugé, Crosse, Lee, were quoted to support the proposition that shock *per se* is not the cause of alarming symptoms or death, in inversion of the uterus.

By reference to veterinary surgery, cases may be adduced to show not only that uterine inversion among animals is not *per se* especially dangerous, but that inversion, complicated with accidents in themselves accounted most dangerous, is not necessarily fatal. In such cases reposition alone, unaccompanied with any care for existing uterine lacerations may be followed by perfect and speedy recovery. In support of this proposition, cases were cited from the writings of J. Rainard, Guillamin, Gellé, Elevout.

As to the objection regarding the difficulty of inverting the uterus after contraction, it must be admitted that contraction of the uterus into a firm body would certainly render more difficult the inversion. The facility with which the flaccid uterus may fall into itself like tripe, or a wet bladder or the finger of a glove, certainly contrasts strongly with the difficulties encountered by experts in restoring the inverted uterus, even as early as four hours after labor. In the absence of any experience in the matter of purposely inverting the uterus, it will be necessary in support of the practicability of this feature of the proposed operation to draw upon experience derived from practice in midwifery. A variety of facts may be brought to bear to show the likelihood of success in efforts at inversion which may be in a measure classified thus: direct facts as to the ease with which it has been accomplished directly after labor; facts showing the readiness with which from trifling causes inversion may be induced within a few weeks after

labor; facts seeming to show that it may even occur in the virgin uterus, and apparently from minor causes. Replacement of the uterus after inversion, whether that organ be lax, moderately condensed, or in a state of complete involution, is an act so nearly akin to that of inversion that any facts tending to indicate the facility with which an inverted uterus may be restored to position have a bearing upon the question of the practicability of inverting the uterine tissue. Hence in the category of available facts for our present purpose belong those showing facility, or possibility of reduction of the inverted womb at any stage or condition of inversion. Referring to inversion, Barnes, Hunter, Byford, Gooch, Boivin, Dugé, Baudelocque, Radford, Cowan, J. T. Simpson were quoted to prove (1) the ease with which inversion has been accomplished directly after labor, (2) the readiness with which from trifling causes, inversion may be induced within a few weeks after labor, (3) that inversion of the uterus may even occur in the virgin uterus. Facts were adduced to prove the ease with which even the chronic inverted uterus was restored. Fraenkel's experiments with atropia, morphine, and chloroform in cases of spastic contraction of the uterus in the second or third stage of labor, were suggestive.

This combination recommended by Dr. Fraenkel, injected into the *cervix uteri* at the proper moment before the operation, might be relied upon to antagonize any excess of contraction of the uterus which experience might show to interfere with the efforts of the operator to invert the uterus.

In regard to the objections having reference to hæmorrhage from the uterine incision, it will be observed that in the plan proposed, the incision through the uterine walls is made with the cautery. While it is probable that the protecting power of this agent would guarantee the arrest of the bleeding from the uterine wound for a time under conditions of rest, it must be admitted that, in subjecting these seared edges to the changes of relation incident to the process of inversion, there would be danger of re-opening the vessels and loss of blood. In such a case the assistant managing the thermo-cautery would follow the edges of the wound with the purpose of retouching bleeding points when practicable. That the actual cautery will arrest the hæmorrhage from the uterine wound, even under circumstances of change in its size, etc., the following facts prove.

R. W. Felkin, Breitmann, Playfair, Baudelocque, Edmunds, James Whitehead, Robert P. Harris, Fancourt Barnes were cited in support of the proposition that hæmorrhage is rarely the cause of death.

In regard to the third ojection having reference to the narrowing of the pelvis, and the difficulties in the way of the suggested procedure thereby presented, it may be stated that while narrowing of the pelvis would always prove more or less of a hindrance, yet it must be borne in mind that in the majority of cases of deformed pelvis, however much any given diameter may be shortened, there yet remains spaces to one or the other side of the narrowing line through which the womb might be made to pass by the *vires a fronte et a tergo*. Generally in the process of inversion, as the uterus would be drawn through the superior strait, four thicknesses of the organ would be presented at the conjugate; and in cases of unusual narrowing, difficulty might be experienced in this manœuvre. In extreme contraction of the pelvis, dexterity and ingenuity on the part of the operator might enable him to cause the organ to pass in the process of inversion a very narrow space, possibly no wider than twice the thickness of the uterine parietes. Thus by making the incision, where practicable, near the fundus the fold formed by one lip of the wound and its apposed surface of uterine wall might be made to pass; to be followed by a similar fold of the corresponding edge of the incision.

Stein and Wiegand recommend that after the operation of Cæsarean section if the uterus does not contract so as to sink into the pelvis, it shall be seized by the whole hand, as in taxis for hernia, and be pressed down into the pelvis. In a narrow brim, this procedure, they think, insures that the uterus once pressed into the pelvic cavity cannot rise out of it again. Spitzbarth makes a similar suggestion. These recommendations of practical men suggest the feasibility of inverting the uterus by adroit manipulation even in cases of marked contraction. It may as well be stated, however, that the plan of operation here proposed has its limits of practicability as compared to the Porro operation, cases of extreme pelvic obstruction as well as those involving such changes in the parenchyma of the uterus as would render inversion dangerous, if not impracticable would, of course, not fall in the category of those to which the method here suggested might be applicable.

In regard to the fourth objection as to the hindrance presented by a non-dilated *os uteri;* it may be said that according to the majority of authorities, the most favorable time for performing Cæsarean section is after labor has set in, and should interference be delayed till the *os uteri* were softened and ripe for dilation in the greater number of cases the delay would not prove injurious to the mother or child.

With the present means of dilating the cervix during labor, it is to be presumed that while an imperfectly dilated os would not unfrequently prove a hindrance it would not often be an obstacle in the way of the proposed operation.

Barnes, Thomas and Lusk were cited to prove the ease with which the cervix uteri might be dilated.

It may be inquired, what would be the relation of the ovaries to the proposed line of ligature in an inverted womb? Several writers refer to the ovaries as resting on the edge of the inverted uterus as if about to fall into the cavity. A specimen from which this statement has been deduced forms the original of one of the standard cuts representing that condition. It is a case of partial, not of complete, inversion. Some authors, as Boivin and Dugé, state that the ovaries are not within the cavity of the uterus. Other writers, as Levret, report cases in which the ovaria were found within the inverted cavity. Schultze states that they are there found, and the cut that accompanies his text so shows these organs. In a number of instances, recent and old, the amputated uterus has been found to contain one or both ovaries. In

many cases of chronic inversion the appendages have not been found within the cavity of inversion. A study of the relation of the ovaries after complete inversion of the uterus will lead to an indorsement of the statements of Winckel and Schroeder as correct. Winckel writes, "In puerperal inversion, as a rule, the tubes and ovaries fall into the cavity (of inversion.)"

Says Schroeder, "In recent puerperal inversion all of the appendages are in the uterine funnel."

In the records of medicine are not wanting quite a number of cases the history of which teaches that the plan of operation here proposed may not be fatal. Cases were cited from the works of Demmé on "Uterine Inversion" to prove the latter proposition.

In conclusion, Dr. Bartlett said: Mr. President: In the course of my researches in preparing this paper, I have looked expectingly for the presentation of the same proposition as I have here made from co-laborers in the field of obstetric surgery. I have been rather surprised to have met no allusion to the method. The germ of the plan here proposed may however be found in the writings of that brilliant obstetrician to whom more than any other, suggestions for improvement in the operation of Cæsarean section are to be credited, James Blundell. In his article on laceration of the uterus occur these words: "Would extirpation of the uterus, *with or without inversion*, be of service in these cases? This question may be answered next century."[1]

DR. A. REEVES JACKSON said: I have never performed Porro's operation and am not sufficiently familiar with the literature of the subject to be a proper person to open, or even take part in the discussion. I confess I scarcely understand what advantages this operation proposed by the essayist offers over the improved operation by Sänger. I would like to know whether Dr. Bartlett has performed this operation either upon the living subject or the cadaver. It seems to me there are practical difficulties in the way. In a review by Harris, of Philadelphia, in the *American Journal of the Medical Sciences*, of the work of Mangiagalli "On the More Recent Modifications of the Cæsarean Section," it is stated that it had been proposed to invert the uterus; for the purpose, however, of lessening the danger from septic infection, and not to facilitate the amputation, as is designed by the suggestion of Dr. Bartlett.

DR. E. J. DOERING asked how often the Cæsarean operation had been performed in Chicago.

DR. W. W. JAGGARD thought Dr. Bartlett's paper a very ingenious essay, although not based upon sound surgical principles. In the first place, he thought the title of the essay a misnomer. The operative procedure proposed by Dr. Bartlett was not in any sense of the term a modification of or a substitute for Porro's operation. It was a perfectly distinct operation. Dr. Bartlett's method offered no advantages over Porro's operation, as modified by Müller and others. The abdominal cavity is not more thoroughly closed. The presence of a large pedicle does not embarrass the closure of the abdominal incision. The relation of the parts in the suggested procedure are not more natural and much less strained than in the *status* in which Porro's method leaves them. Drainage is entirely unnecessary when Porro's operation has been skilfully performed.

On the other hand, the positive disadvantages are numerous: The dangers of shock and hæmorrhage in artificial inversion of the uterus has been very much underestimated by Dr. Bartlett. The cases, collected from the literature of the subject, when they were at all relevant, were questionable as to authenticity. Accidents occurring to the uterus among the lower animals could not be adduced in evidence as to what would be the probable effect apon human beings under similar conditions. The thermo-cautery was inadequate to the arrest of hæmorrhage from a large incision through the walls of the pregnant uterus.

The uterus could only be inverted with ease, when it was pathologically flaccid—an exceptional condition. Porro's operation was performed in cases of the simple, flat rhachitic pelvis, when the antero-posterior diameter of the brim was 6 cm. or under. Above 6 cm. craniotomy or the forceps is indicated. It would be very difficult to invert the uterus through the conjugata, oblique or transverse diameter under such conditions. In the pelvis of Robert, or in the osteomalacic pelvis, in which the degree of contraction is usually higher, artificial inversion of the uterus would be wellnigh impossible.

Then amputation of the inverted uterus is a dangerous operation *per se*. Of the forty-eight cases collected by Dr. West,[2] twelve terminated fatally. Of fifty-eight cases of amputation of the inverted uterus, reported from a German source,[3] eighteen terminated fatally. "In[4] 106 cases of amputation by ligature and otherwise, over 31 per cent. of deaths occurred." But it is not necessary to multiply statistics. So great is the mortality of this operation, that A. Martin[5] has proposed as a substitute the total extirpation of the uterus.

If, then, upon *à priori* grounds Dr. Bartlett's suggestion has no real advantages over the modified Porro operation, and, on the other hand, possesses actual disadvantages, it is scarcely probable that the expedient will receive serious consideration.

DR. J. SUYDAM KNOX said: Dr. Jaggard has about covered the objections I intended to make. My impression is that Dr. Bartlett in his paper has overestimated the relaxation of the uterus immediately after delivery, and the ease with which inversion can be accomplished. Atony of the uterus is the first cause of inversion; and when we consider how min-

[1] After writing this article the writer found in the essay of Dr. Harris on the Porro operation in continental Europe, published in the American Journal of the Medical Sciences, in 1880, the following sentences:

"Several other plans [of treating the cervix] have been proposed. * * * (2) to invert the uterus after its evacuation and constrict and remove it by the vagina. This plan tends to complicate the case and increase its dangers, etc."

Had the writer been aware that the suggestion which forms the basis of the foregoing paper had been previously published he would not have prepared it. Inasmuch, however, as the merits of the method proposed are in no wise affected by its having been previously suggested, he has decided not to withhold the article from publication.

[2] Diseases of Women, p. 240.

[3] American Journal of Obstetrics, Aug., 1868.

[4] Emmet: Principles and Practice of Gynecology, 1884, p. 436.

[5] Pathologie und Therapie der Frauenkrankhe ten, 1885, p. 144.

ute is the percentage of inversions in the vast number of labors, we can fairly assume that relaxation immediately after delivery seldom occurs. If this be so, inversion, even with the *vis a tergo*, would be extremely difficult. Again atony of the uterus is the cause of the most dangerous symptom or complication of inversion, namely hæmorrhage; therefore the cases most favorable for the operation of Dr. Bartlett would be the last ones in which so doubtful an experiment would be tried. The Doctor has made a valuable suggestion. Any method that successfully removes the uterine stump from the abdominal cavity, without attaching it to the abdominal incision, advances the operation of hysterectomy. In the ablation of the non-pregnant uterus, I think Dr. Bartlett's method finds its best opportunity.

DR. JAMES H. ETHERIDGE asked if the performance of inversion by forcible traction involved the full dilatation of the neck of the uterus. How does Dr. Bartlett propose to accomplish this, does he dilate it forcibly? With the uterus well up beyond the umbilicus, how do the broad ligaments come out of the pelvis, and with the uterus forced clear down out of the vulva, how much traction is there going to be on these broad ligaments? Is there room enough to permit the uterus to be drawn down?

Why, under the circumstances, could not forceps be immediately applied to the edge of the cut uterus, and arrest the hæmorrhage, and the work be then proceeded with at pleasure? I speak of hæmostatic forceps.

DR. E. W. SAWYER said: It seems a little presumptuous for one who has never had experience in this department to attempt to enlighten the Society. One of the most interesting questions to be decided is which operation to perform. I confess if I were confronted to-night with one of these cases I would be wholly incompetent to decide between Cæsarean operation and the operation of Porro. It may be interesting to read the words of Lawson Tait upon this very point, showing his preference for the new operation, so-called. In the fifth number of the *British Gynæcological Journal*, he says: "The whole of my experience in meddling with the pregnant uterus by abdominal section, consists of five cases, three of the ordinary Cæsarean section and the two I am about to describe in detail. Of the Cæsarean sections one was performed for malignant disease of the vagina about fourteen years ago, the other two for deformed pelvis respectively seven and five years ago and the mothers died, and only one of the children is now living. The results indeed are such as to determine me never to repeat this procedure, having before me the arguments of Dr. Godson and the fact that both my amputation cases have recovered." At the same meeting Dr. Routh said: "That he was much interested and instructed by Dr. Lawson Tait's paper. At the same time he could not help making some criticisms upon it. First, he believed that Mr. Tait had exaggerated the mortality of the Cæsarean section. It was not anything like 99.971 per cent. Churchill stated that out of eighty cases twenty-three mothers were saved, or 28.7 per cent., forty-four children being saved. Dr. Radford out of seventy-six cases he collected, found 14.28 were saved, and forty-six children were also saved. Dr. West, out of 409 cases states the recoveries as 38.4 per cent. 237 children being saved. Now he (Dr. Routh) could not help feeling that if in these days of improved antiseptic abdominal surgery, the same skill and care were taken in cases of Cæsarean section, the safety of the mother would be much more common." It is interesting to see how gentlemen will differ in their opinions upon such an important thing as the selection of an operation in an emergency case. So I am still in doubt whether to adopt the modern method of Porro or to depend upon the Cæsarean section, which the remarks of Dr. Routh would indicate is quite as favorable.

At the request of Dr. Etheridge, Dr. Sawyer narrated the following case, showing the shock and hæmorrhage of acute inversion: I will state very briefly an experience which, no matter how long I may live, seems as if it would never become dim. I have never had any doubt that the determining cause of the acute inversion in this case was the enormous distension of the uterus due to the large quantity of *liquor amnii*. Before the woman was delivered, I was impressed with the fact that she probably had twins, but this was not the case. When the woman was delivered the bed was flooded, the *liquor amnii* flooding the room even. I put my hand upon the woman's belly, as is my custom, and at the first indication of contraction of the uterus, I substituted the husband's hand for mine that I might pay attention to the child. I am confident that the husband's fingers dimpled that uterus. I had no sooner detached the child than I gave the usual teaspoonful of ergot; I was in a hurry on account of the flabby condition of the uterus, and for fifteen minutes my time was occupied in paying attention to the child, getting it to breathe. The woman, who had recovered from a small quantity of ether which I gave her, threw up her hands and I saw she was pale. I put my hand under her husband's and felt the edge of the uterus like the edge of a saucer, I could define the margin of the crater, my finger in the vagina met the globe inverted and the truth flashed across me that I had an inverted uterus. Now fifteen minutes had not elapsed before that uterus was so firmly ergotized that it was impossible to replace it. I immediately resumed ether and the woman began to snore, but that made no difference, the womb was ergotized and the woman died from shock and hæmorrhage with the uterus unreduced.

Dr. Jaggard has called attention to the enormous hæmorrhage and this reminds me of a case in which I removed a fœtus from the abdomen of a woman, in the little town of Boulder. The fœtus had been in the uterus for three and a half years. It was an adventitious uterus the exact structure of which could not be ascertained, but the hæmorrhage from the false uterus was enormous and I think destroyed the woman. If the false uterus and adventitious sac could bleed to that degree and so early in pregnancy, the dangers of hæmorrhage must surely be greater in the uterus at term containing a living fœtus and an active placenta.

This operation was done in 1874. The hæmorrhage was cavernous. We arrested the hæmorrhage by seizing the edges and puckering them up and tying an enormous ligature around the stump; for a moment that arrested it, but the woman subsequently died.

DR. H. T. BYFORD said: Like any other operation this one, supposing it to be an operation that has been performed, has its limitations. I think Dr. Jaggard's suggestion that a greatly contracted pelvis might afford sufficient difficulty to make the operation impracticable, is a good one, although I think that the uterus might be inverted through a pelvis too small or too much distorted for a safe craniotomy. Another limitation would be an undilated condition of the cervix. The irritation produced by rapid dilatation would certainly render the cervix unfit to be left as a stump, and make the Cæsarean or Porro operation preferable. If the os is already dilated, then Thomas' revised laparo-elytrorrhaphy must be given precedence, provided there be no counter-indications. The difficulty of inverting the uterus is not an imaginary one, and it seems to me that the best way to overcome it would be to invert the uterus, placenta and all, before the placenta is separated, and between pains. This would tend to still further limit the operation to cases without extreme contraction and would bring it into rivalry with craniotomy. Its chief advantage over the Porro operation lies in not fixing the cervix several inches beyond its normal position; and here lies the germ which the author seems to be trying to develop. Should there be a condition of the uterus which would not favor the Cæsarean operation as performed by Sänger and Leopold, should the size of the cervix or vagina render fixation of the stump in the abdominal too difficult, were the uterine walls not sufficiently relaxed to be inverted, or the pelvis not roomy enough to allow inversion with the placenta attached, should the condition of the tissues about the vagina and bladder contra-indicate laparo-elytrorrhaphy, and should the os dilate naturally and easily, then this operation would find its rare opportunity. The process of coning out, or rather slicing around the cervix, and inverting the cervix, is easier to talk of than to perform. Any one who has seen the uterus amputated, even in cases of fibroid tumors, will agree that the loss of blood, including that taken off with the amputated pregnant uterus, and the vascularity of the stump would make the process of inverting the sliced cervix very hazardous. The stump, thus turned down, would undoubtedly shrink rapidly, and become a hard one to manage. As to opening the uterus with the cautery, I think this would not possess much advantage unless complete constriction of the uterus and broad ligaments could be made, so that bleeding would not interfere with the complete searing of the parts.

DR. BARTLETT in closing said: Some of the fellows taking part in the discussion, as they have stated, have not had an opportunity of hearing more of the paper than the bare proposition; not needlessly to occupy time, I shall pass over such objections (all of which I recognize as forcible), as have been fully considered in the paper now printed.

Dr. Jaggard refers to the authorities quoted by me as "questionable;" so far as my knowledge extends, not a case cited rests upon other than unquestionable authority. The Doctor thinks the actual cautery would prove useless as a means of arresting hæmorrhage from the uterine incision. Prior to the time of Ambrose Paré, the cautery was relied upon "to arrest all forms of hæmorrhage."

Dr. H. T. Byford has dwelt upon the difficulty of dilating the *os uteri* by artificial means, and in my opinion he has not exaggerated the difficulties often encountered in practice, where the parts are not prepared for dilation.

In regard to the embarrassment felt by the Secretary as to which operation to prefer, whether the old or the Porro method, I might say, that, in face of the several substitutes and modifications, he would be amply justified in preferring the old Cæsarean section.

DOMESTIC CORRESPONDENCE

BLACK CERUMEN.

TO THE EDITOR OF THE JOURNAL:

Dear Sir:—Some time ago a lady told me that her little girl, about four years old, had, since birth, discharged black wax from her ears. Never having met with such an instance, except where inspissated, although I do a considerable ear practice, and not recollecting ever to have read of anything of the kind, I concluded it was either a mistake or an anomaly, and so asked an immediate examination to determine the facts.

The mother and child being at my house, I proceeded at once with the investigation. I found both external auditory canals bathed with soft, fresh looking cerumen, more abundant than usual, of about the consistency of thick treacle or thin tar, in fact, looked much like tar, being intensely black and so tenacious as to bear drawing out in long threads. Under the microscope it presented identical appearances with freshly secreted healthy cerumen. No vegetable cells, spores or filaments were found, as I had anticipated, nor were there any pigment granules. The coloring matter seemed to be of a soluble nature, and was thoroughly incorporated with the wax, giving it an amber tint under the cover glass where thickest.

The child's hearing is, and has always been, perfect; nor has she ever had any disease of her ears. She has auburn hair, a beautiful fair and clear skin, and dark brown eyes. All the other secretions and excretions of skin and other organs are normal. Her mother assures me that the wax from her ears has been black from her birth, and always unusually copious.

If any of the readers of THE JOURNAL can cite a similar case, or offer any scientific solution of this, I shall feel under many obligations.

Very truly,

T. E. MURRELL, M.D.

Little Rock, Ark.

POTASSIUM CHLORIDE.

TO THE EDITOR OF THE JOURNAL:

Dear Sir:—As regards the use of the chloride of potassium, as recommended by Dr. A. F. Pattee, of Boston, Mass., and published in your journal, I desire to say that I have used it in several cases of *anæmia*, and also in myalgia, and found it highly satisfactory. I can only wonder that its use in cases of this nature has never been recognized before. I have also found it a most excellent mouth wash.

Yours very sincerely,

H. C. FIELDING, M.D.

Toledo, Ohio, Sept. 24, 1886.

AMERICAN MEDICAL ASSOCIATION.

FORMED IN 1846.

Next annual meeting will be held June 7th, 8th, 9th, and 10th, 1887, in Chicago, Ill. President, E. H. Gregory, M.D., St. Louis, Mo. Permanent Secretary, W. B. Atkinson, M.D., Philadelphia, Penn. Assistant Secretary, J. Nevins Hyde, M.D., Chicago, Ill. Treasurer, Richard J. Dunglison, M.D., Philadelphia, Penn. Librarian, C. H. A. Kleinschmidt, M.D., Washington, D. C. Chairman of Committee of Arrangements, Charles Gilman Smith, M.D., Chicago, Ill.

All membership dues should be sent direct to the Treasurer, RICHARD J. DUNGLISON, M.D., lock box 1274, Philadelphia, Penn.

MISCELLANEOUS.

ASSOCIATION OF THE SURGEONS OF THE PENNSYLVANIA COMPANY.—The eighth semi-annual meeting of this Association will be held at the Seventh Avenue Hotel, Pittsburgh, Pa., Tuesday, October 19, 1886, commencing at 9 A.M., Eastern time. A number of papers on appropriate subjects are promised.

FITE–STEVENSON.—Married, at Calvary church, Memphis, by the Rev. Father Klein, Sept. 18, 1886, at 9 A.M., Dr. C. C. Fite, recently of Nashville, now of the East Tennessee Hospital for the Insane, near Knoxville, and Miss Bessie M. Stevenson, of Dallas, Texas. No cards.

Long life and abundant happiness for both is the wish of the Editor.

IRREGULAR MEDICAL SCHOOLS.—The Iowa State Board of Health will not recognize diplomas from the following colleges: American Eclectic College, Cincinnati; American Health College, Cincinnati; American University of Pennsylvania (Buchanan), Philadelphia; Beach Medical Institute, Indianapolis; Bellevue Medical College of Massachusetts; College of Physicians and Surgeons, Buffalo, N. Y.; College of Physicians and Surgeons, Milwaukee; Eclectic Medical College of Philadelphia; Edinburgh University, Chicago and St. Louis; Excelsior Medical College, Boston; Hygeo-Therapeutic College, Bergen Heights, N. J.; Hygeo-Therapeutic College, New York City; Joplin Medical College, Joplin, Missouri; Livingston University, Haddonfield, N. J.; Medical Department of the American University of Boston, Boston; New England University of Arts and Sciences, Boston; New England University of Arts and Sciences, Manchester, N. H.; Penn Medical University, Philadelphia; Philadelphia University of Medicine and Surgery, Philadelphia; Physio-Eclectic Medical College and Physio-Medical College, Cincinnati; St. Louis Eclectic Medical College, St. Louis; St. Louis Homœopathic Medical College, St. Louis; Curtis Physio-Medical Institute, Marion, Indiana; American Anthropological University of St. Louis; Medical Department of Drake University, Des Moines, Iowa; and King Eclectic Medical College, Des Moines, Iowa.

SCIENTIFIC EXPERTS AS WITNESSES.—*The Chemical News* says: Let us look at this question as it presents itself to men of science, alike to the chemist, the physicist, mechanician, the geologist, the physician, and the microscopist, though certainly not to the astronomer, who is in no danger of being called, as such, to give his testimony. The expert occupies a totally anomalous position in court. Technically he is a mere witness; practically he is something between a witness and an advocate, sharing the responsibilities of both, but without the privileges of the latter. He has to instruct counsel before the trial and to prompt him during its course. But in cross-examination he is the more open to insult because the court does not see clearly how he arrives at his conclusions, and suspects whatever it does not understand. The late Dr. R. Angus Smith complained of being "contemptuously compelled to herd with thieves and scoundrels in a witness-box." He adds: "I have seen barristers speaking to a scientific witness in such a way as to show that to them a witness was always an inferior person." Surely, every person who has been present at a technical trial, or has had to appear as an expert in a poisoning, a patent, or an adulteration case, will be able to confirm this from his own observation and experience.

Now it may, perhaps, be cynically hinted that men of science should be willing to bear all this annoyance for the public good. But is it for the public good? In the first place, not a few of the most eminent men in every department of science distinctly and peremptorily refuse to be mixed up in any affair which may expose them to cross-examination. "I will investigate the matter, if you wish it, and will give you a report for your guidance, but only on the distinct understanding that I am not to enter the witness-box." Such in substance is the decision of not a few men of the highest reputation and the most sterling integrity. Certainly it is not for the interests of justice to render it impossible for such men to give the court the benefit of their knowledge.

Further, the spectacle of two men standing contradicting or seeming to contradict each other in the interest of their respective clients is a grave scandal. Men of the world are tempted to say that "science

can lay but little claim to certainty, and is rather a mass of doubtful speculations than a body of demonstrable truth." To us, at least, there is nothing more saddening than to read the trial of a notorious poisoner, or the report of a great patent case, especially if taken along with the comments of the press and of society on these occasions.

Here, then, we see that our present mode of dealing with scientific evidence is found on all hands unsatisfactory. The outside public is scandalized; experts are indignant; the bench and the bar share this feeling, but unfortunately are disposed to blame the individual rather than condemn the system.

But we fear that this unanimity of dissatisfaction will vanish as soon as a remedy is seriously proposed. To that, however, we must come, unless we are willing to dispense with scientific evidence altogether.

As it seems to us, the expert should be the adviser of the court, no longer acting in the interest of either party. Above all things, he must be exempt from cross-examination. His evidence, or rather his conclusions, should be given in writing, and accepted just as are the decisions of the bench on points of law.

THE BACILLUS OF MALARIA.—In 1879 Professor Tommasi-Crudeli published in the *Atti della Reale Accademia dei Lincei* at Rome, a memoir on the distribution of the subsoil water of the Roman Campagna, and on its influence in the production of malaria. In this research, which proved the starting-point of new studies on the etiology of malaria, the author traced the natural history of this morbigenous ferment, discarding many errors and prejudices of old medicine, and maintaining that the causal agent of the disease could only be a living organism. Towards the close of the same year Tommasi-Crudeli and Klebs published in the same *Atti* a memoir embodying the results of inquiries on malaric airs and soils, and of experiments on rabbits, proving that the living organism is a schizomycete, named by them "bacillus malariæ." As the result of researches on the individual affected with malaria, Marchiafava and Celli announced that within the red-blood globules are constantly found plasmatic bodies (*corpi plasmatici*) endowed with lively amœboid movements, in which the hæmoglobine is transformed into melanine (melanæmia); and in a further memoir which they have published this year, they suggest as a more probable hypothesis the opinion that those plasmatic bodies are the living organisms which produce malaria. Thus Marchiafava and Celli confirm in substance Tommasi-Crudeli's opinion, that a living organism is the cause of malaria, but they regard its form as differing from a schizomycete. These observations are embodied in a note with which Todaro prefaces a communication by Tommasi-Crudeli in the April number of the *Lincei*, on "a bacillus found in the malaric atmosphere around Pola (Istria)." This bacillus resembles the most typical forms of the bacillus malariæ which Tommasi-Crudeli and Klebs found in the air and subsoil of the Roman Campagna, which is *par excellence* the home of malaria. Since identity of form does not necessarily imply equality in infective power, Tommasi-Crudeli reserves his definite opinion on the bacilli discovered in the air of Pola, until they shall have been submitted to experimental research, a plan of which he has sketched.—*Lancet*, August 21, 1886.

AMERICAN RHINOLOGICAL ASSOCIATION.—This Association will hold its fourth annual meeting at St. Louis, Mo., October 5, 6 and 7.

NEW YORK STATE MEDICAL ASSOCIATION.—*Fifth District Branch.*—The second annual meeting of the Fifth District Branch will be held in Brooklyn on Tuesday, Oct. 12, 1886. There will be a morning and afternoon session. All Fellows are solicited to contribute to the meeting, either by reading papers, notes or communications, or by exhibiting specimens. The Secretary desires to be notified of the title of any paper to be offered. E. H. SQUIBB, M.D., *Sec'y.*
P. O. Box 94, Brooklyn.

PROF. LUDWIG BANDL, of Vienna, has been appointed to Prof. Breisky's Chair in Prague. Breisky goes to Vienna.

THE AMERICAN ACADEMY OF MEDICINE will meet in Pittsburgh on October 12th and 13th.

SMALLPOX AND VACCINATION IN NEW YORK.—We take the following from the "Fifth Annual Report of the State Board of Health of New York:" "The objections and occasional resistance to vaccination which are met with among immigrant passengers, indicate a considerable scepticism in European communities, more particularly among the English people, as to the protection afforded by it, or else a fear that constitutional disease will be introduced by that means. The groundless character of the fear that disease will be communicated by vaccination, when proper care is used in the selection of the vaccine virus, has been too often demonstrated to require any argument in this place. The result of the teachings and influence of the anti-vaccinationists is well illustrated by the fact, that in the hospitals of the city of New York not a single case of smallpox exists at this time, while in the city of London the reports have shown for months past an average of upwards of eleven hundred cases in hospital. In New York City, where a 'from house-to-house' inspection and search among the tenement population for the unvaccinated is practiced every year, smallpox is not met with, except as it was imported and developed by persons from other localities; in London, the weekly average of new cases, as indicated by bills of health and the number in hospital, has been from four to five hundred. The number of cases of smallpox on vessels that entered that port in 1883 and 1884, was twenty-five."

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 18, 1886, TO SEPTEMBER 24, 1886.

First Lt. W. W. R. Fisher, Asst. Surg., granted leave of absence for one month, to take effect Sept. 10, with permission to apply for one month's extension. (F. O. 88, Dept. Arizona, Sept. 1, 1886.)